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ORGAN OF THE AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE
AND THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE

Founded by HENRY E. SIGERIST

Acting Editor—OWSEI TEMKIN

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A ROVING COMMISSION

THE DOCTOR CALLS ON SOME OF HIS FRIENDS *

HENRY R. VIETS

Doctors in general have two outstanding endowments—devotion to their profession and a spirit of camaraderie, an association in friendship with their fellows. The first—their love of medicine—seems implicit in their chosen task, for who, except the doctor, in the absence of a spirit of dedication would labor so long over the microscope, wrestle with life's secrets in the dead house, view meticulously but often continuously the sorrows of our brothers, withstand the tympanic tediousness of multifarious human complaints, particularly the tales of woe of the more loquacious of the species, bear the irregularities of his very existence and the relatively modest monetary return in these days of a heightening of our sense of economic security. But others have sung our praises on the score of devotion in better tune than this:

> There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization.

* The Annual Address of the Cleveland Medical Library Association, January 16, 1948.

It is on the theme of comradeship that I would speak to you tonight. There is something about our inherited instincts and our prolonged training, both in school and hospital, that knits the medical profession together as none other. We walk through life, speaking a common language of our own, often unintelligible to those outside the fold, and in work and play, a doctor is quickly at ease with a " professional colleague," often to the exclusion of his fellow men. We have doctors' clubs, doctors' tables at clubs, doctors' meetings, doctors' libraries, doctors' holidays at national and international congresses, doctors' orchestras and doctors' golf tournaments. A few doctors become politicians, poets, novelists or painters, but most of us stick to our task, closely knit and essentially sociable. Only occasionally does one meet crustiness, like a knot in the wood as the board goes through the mill.

Doctors too have been great travellers and not a few have published accounts of their adventures. Those of you who burrow deep into the literature within these walls know well Richard Bright's *Travels from Vienna through Lower Hungary*, Edward Brown's (son of Sir Thomas) *A brief account of some travels in divers parts of Europe*, Hamilton's *Itinerarium*, Hodgkin's *Narrative*, Macmichael's *Journey*, Mungo Park's *Travels*, Smollett's *Travels*, and many others of lesser note. They set forth as students, as physicians accompanying a wealthy patient, as adventurers, or holiday bound, as did Harvey Cushing when he went to the south of France in 1900 and kept a diary recently published by the Rowfant Club. Not infrequently young doctors go with letters of introduction to the great in medicine, ever to expand their education by intimate contact, a " brain dustings " of inestimable worth. Let me take you on a brief journey to two medical shrines of the past where comradeship was outstanding, 'midst the groves of Attica, and the spirit was communicated to become a perpetual possession.

Osler at Oxford

As a young medical graduate I spent the winter of 1916-1917, black war years for the British, in Oxford with Sir William Osler and Sir Charles Sherrington. Osler's home at 13 Norham Gardens, when I first saw it, had already become headquarters for all Canadians and Americans. Osler, then sixty-seven, was plodding on " cheerily " as was his son, Revere, leading a battery in the maelstrom of the great battle of the Somme. The casualty lists were long in those days, with a loss to the very

flower of the British nation. And yet Osler carried on, with "all flags flying." I wrote in my diary:

"If you stood at the door of the Radcliffe Infirmary, one of the finest of the Radcliffe memorials, on a Sunday morning and looked up the Woodstock Road at precisely ten o'clock you would see Sir William round the corner with his quick energetic step, coat-tails flying, yellow gloves flapping from his hand held in one trousers pocket, cane swinging on the other arm, head erect, eyes thoughtful but brilliant, observing all as he passed. A wave of the hand to an old friend, a word with a neighbour over the garden wall, a pat and a witticism for a child, and quickly he had passed down the street. When he reached my side, a hearty handshake, a pleasant word and, with arm on my shoulder, we entered the hospital. Then a round of the wards, a compliment to the nurse, a joke to the house-surgeon, a sympathetic touch for the sick and a bedside clinic for ten minutes, running the whole historical gamut of pernicious anemia from the first reported cases to the special aspect of the case before him. After an hour in the wards I followed him to the pathological building, in his opinion the very heart of the hospital, where the specimens of the past week were examined and correlated with the clinical pictures so well remembered from the week before. The end of the morning always came in the garden with Sir William in the centre of the group, talking on all the aspects of the cases seen, with characteristic vivacity, enthusiasm and profundity."

In his home he was always close to his books, for his library flowed over the house, invading the sleeping rooms and even the dining room. At dinner he often arose to reach for the handy Dictionary of National Biography to verify or augment some subject of conversation. He would suddenly jump up, capture the right volume, bring it back to his chair, and, holding the book on his knee, read the important paragraph aloud. Perhaps this would happen two or three times during dinner, for he always held that the best time to learn was when the idea sought for first came to mind. I am sure that he considered the ideal public library or museum as one never closed, where the doors would always be wide open when the inspiration came. At tea or after dinner came the delightful toss of conversation on the shaded porch, with the books always at hand for reference. His library was a library *used*, in a way I have never seen duplicated. Dust seldom collected, especially on the older books where the masters of medicine originally described the clinical entities. In the early evenings he would slip away for a quiet hour in the library, his going being

almost imperceptible, so royally entertained were we by Lady Osler. Just at the psychological moment when some important guest was leaving he would appear with a friendly word, link his arm in his guest's and escort him to the door.

In the fall he held what he called his "annual shed." To all who happened to be present fell his duplicate books, pamphlets and reprints, and a very valuable catch it often was for the youngsters in medicine in Oxford at the time. I have seen delighted students carry away a small library in their arms and many a nucleus for a private medical library has been started in this way. Sir William was never happier than on those days when he blessed some Canadian or American student as the young man left the house, with arms full of books and heart full of gratitude and love for his benefactor.

In spite of the terrible personal strain of the War, he never for a moment turned aside from his love of medical history. One day in September 1916 I had occasion to relate to him the story of an excursion I had taken the day before to the little village of Fenny Stratford, north of Oxford, in search of information about Thomas Willis. After listening with the greatest interest, he at once planned a trip to this village on St. Martin's Day, the 14th of November, to attend the yearly patronal festival for Thomas Willis. I wrote, later, to Dr. Bradbrooke of Fenny Stratford and, of course, the whole affair ended in Sir William becoming the orator of the day. We went up together at the appointed time and I have never seen him enjoy a lark so much. He had all the enthusiasm of a boy and fairly carried the Fenny Stratfordians off their feet. Instead of an old staid professor from the ancient University, they met a man who combined all the finest qualities of youth, both mentally and physically, with profound knowledge and the graceful dignity of his honorable office. He told me on the train coming home that it was one of the pleasantest days of the War, the first day in months that he had been able to throw off the constant strain.

Perhaps a more intimate picture can be gained from a letter to my mother, written in August 1916, just after my arrival:

"We have had one of England's rainy days today with showers every few minutes with the sun out warm between times. No wonder England keeps so green and all the things grow so finely. This is certainly an outdoor country as Lady Osler was saying yesterday while we were having tea on her beautiful terrace overlooking her rose garden and tennis court. She said that when she thought of her house in Baltimore she always

thought of the inside of the house, but here when she is away she always thinks of her house as the garden, the inside someway does not make so much difference. The fronts of all these houses are homely with the old brick walls around them, but once inside you immediately go out again to the back of the house where the family live. No. 13 Norham Gardens is no exception. The dining room opens out on the terrace as does Dr. Osler's study, and one goes from the inside out without hardly noticing it as, of course, there are no screen doors. When I wandered up yesterday to their house after a walk through the park with its finely kept flower beds and fine trees, I could not help but think how far away the war seemed; and yet I only had to turn the corner and there were two or three hundred troops drilling in the park, beautiful straight lines of them, all in khaki, with guns and bayonets all moving as one man at the command of the fine-looking young officer who stood on a little knoll. With him was an older General and a French officer in gray-green uniform and red hat and, another, Scotsman with gaily colored kilt. A very striking sight. As I looked an aeroplane came sweeping down and landed in the park a little way off, but not a Tommy turned his head; as they are a very common sight anyway. We see five or six a day sailing over the city and I never get tired of rushing to the window to see these great birds sail gracefully overhead, now turning one way, now another, sometimes going completely over, loop-the-loop, just over Wellington Square, where I live, as I am having luncheon.

" But I am on my way to Lady Osler's. It is about four o'clock and of course everyone is going to tea. Lady and Sir William are home, she having just come from her workroom down on the High where they make things for the soldiers all day long. She has two or three ladies with her and they are just as chatty as home folks. Sir William and I sit out to one side and talk of his books. He has one of the finest private medical libraries in the world, the books filling his large study and even part of the dining room.

" Lady Osler seems to remember everything and everybody. She always asks about people we know in common. She is interested in old silver and has a fine collection, can tell you all about the hallmarks and has a great fondness for going to auctions and picking up old bits. Her silver teapots are the handsomest in Oxford, so the story goes. When brought in they are covered with caps of stuff like quilting and heavily embroidered. Some are very old, having been in the family for years. They keep the teapot hot until ready for use. I do not have one, but I notice that Mrs. Taylor,

my landlady, carefully places the morning paper over my coffee pot in the morning if I am late for breakfast. People wander away from the tea without saying goodby, without they are just talking to you at that minute. In fact few are ever introduced; you are just expected to know everybody at an Englishman's home, your hostess taking it for granted that if you are there you are fit to talk to without introduction. It makes it very informal as you kind of do-as-you-please. You are free to go into the study and read or out into the garden and no one pays any attention to you or anyone else. There seems always to be any number of people about so you can always talk and it seems as if you knew everyone all your life. Of course they talk mostly of the war as everyone has some connection with it. Of the four ladies I talked with, one had lost her husband and one son and had another at the front, another had two boys at the front, another had lost her only boy, the fourth had no boys to send. Thus it goes, everyone with someone serving.

"Lady Sherrington, wife of Sir Charles, was there, looking very happy, having just come from the P. O. with a telegram from her boy saying that he was coming home for three days, having been "out there" for four months in the thick of it. She invited me to dinner and I just had time to skip home and jump on my bike for her house. We had dinner alone with Sir Charles they having no other guests that night. Their fine dining room is hung with old paintings and the room is done in oak, the table copied after one in Wytham Abbey where you get the strawberries. A large bowl of twenty or thirty roses in the center, just fresh from the garden. Dinner: soup, boiled salmon with white sauce, a pair of cold chickens which Sir Charles skillfully carves on the table, with two or three kinds of vegetables, a custard pudding, crackers and cheese or butter, and coffee on the terrace behind the house under a fine chestnut tree with roses and flowers everywhere and twilight about nine-thirty. I smoke my pipe, he a cigarette and sometimes she also, as do all the English ladies in their own homes but not elsewhere. Dinner is finely served by a maid in black and white who stays in every night (dinner being at eight) and gets eight bobs (two dollars) a week! They have three maids; Lady Osler six. At that rate they ought to."

Klebs at Nyon

Another August some years later, with a second war about to begin, brings us to Les Terrasses, the home of Arnold Klebs, at Nyon on the shore of Lake Leman. The villa in Italian style is set in terraced plot, dropping down to the lake in a series of lovely gardens. A little off-stage

from the house stands a small building, the book-house, two stories of stone, covered with wisteria, looking out on a clipped lawn, shaded by sycamore trees. Over the lake stands Mont Blanc, seen through the haze. I live in a room high up in the house and write in my diary as follows:

"August 15, 1939—I had breakfast in the tower room overlooking the Klebs garden, the lake and the mountains in the distance to the South. There is a small balcony off the room where one can sit, contemplate nature and one's own soul. The atmosphere leads to such thoughts, so peaceful and so far away from war and strife. Welch often sat here in the morning, smoking his long cigars and I have no doubt Cushing and many others have also done so. It is a charming little spot, one long a favorite of mine. Klebs comes in, a towering medieval monk, scholarly and keen, with a persistent urge to delve deep into the minds of the past.

"Together we go to the book-house, so neat and attractive in its appointed place in the garden. One feels like greeting an old friend, a very pleasant friend, always ready to talk or not, as fitting your mood, who shows in his face the sorrows and joys, the vaulted ambitions and bitter disappointments, the glorious triumphs over nature's obstacles and the advancement of knowledge as reflected in the written word. What a constant, ever refreshing companion is this library and how nice it looks this morning in attractive dress, sitting there so quietly in the pale atmosphere of a summer's morning, whispering his hidden secrets, some of them kept for five hundred years, to Lake Leman, immeasurably older and wiser. What can a few centuries mean to the lakes and hills, so colossal, dignified and ancient. The man of the printed book must be as a single breath to these monuments of antiquity which surround us. We dwarf before them and yet feel secure in their strength.

"Klebs is distressed over an error in his check list of incunabula, Cushing's copy of 773-1 having mischievously become 774-1. I believe this is the only mistake, an extraordinary performance, made possible only by Klebs' meticulousness and long checking and re-checking, under freedom from distractions such as one would seldom have in a public library. He has, moreover, all the tools at hand, finely displayed and not moved by hands other than his own. We talk of new and old friends and then I slip down to the bathing beach for a swim, a sunbath and a run with Tony, the dog.

"Later in the day we work in the library, Klebs at his desk and I in the front room upstairs. All my walls are lined with books, broken by windows looking out on the lake, now sparkling in the light. I spend my time looking at Dondi's *Aggregator* (Klebs 349-2), a copy being con-

sidered for the Cushing Library at Yale, Starkenstein's account of Waller's library at Lidköping, books by Casey Wood, Ciba's *Zeitschrift* and finally, a long series of letters from Garrison to Klebs, written in 1912-1913. They are full of pre-war controversy and much else, more enlightening than any letters from Garrison that I have previously seen. They should only be published at an appropriate time in the future.

" For luncheon came Nuyens with a young lady, acting as his secretary and chauffeur of the Chevrolet. They have been motoring from Amsterdam where Nuyens is librarian of the medical library, visiting various libraries in Germany and elsewhere. We had much talk after lunch of books and booksellers. Nuyens has finished the second supplement to his great catalogue, with an introduction in English as well as Dutch. It should prove most valuable in identifying those numerous Leyden editions, published so freely in the Eighteenth Century. It took me years to differentiate between the imprint ' Lugduni Bat ' and ' Lugduni ' (Lyons) and, I have no doubt, a careful study of the catalogue will turn up unknown dissertations by British and American medical students, although the Leyden group has been pretty fully worked up by Innes Smith.

" We hear that Casey Wood, the Canadian and later American ophthalmologist, and early friend of Osler, Streeter, Welch, Jacobs, Cushing, and all the others, who has had a slight ' shock,' is in a hospital in Geneva. Of course, we must visit him at once and so we go by motor to find him sitting in a chair, vigorous as ever, in spite of his slight aphasia. His wife was there, as well as his niece, Miss Fyfe, who flies about the country for him getting photographs of a Ms. As Klebs remarks, so interested is Wood in his work that he tells the soldiers not to disturb his Mss., as Pythagoras did of his drawings. The world rushes by, and we are almost certainly headed for a great war, but Wood, imperturbable, plans his great work on *The Art of Falconry*, with a translation of *De Arte Venandi cum Avibus*, of Frederick II of Hohenstaufen."

Klebs was a perfectionist, and often explosive. His temper led to breaks, but they always healed, usually via a letter. Few in our times have written better letters. I remember his calling me down over some triviality—a forceful back-stiffing gibe, not easy to take. I must have side-stepped for he wrote in reply:

" You vented your reaction by a polite and elegant expression, when my letter really called for a powerful explosion. But then you know I must not be taken *aux pieds de la lettre* ever! These letters of mine to you and

other genial spirits are my great let-off and no matter how cantankerous they may sound, believe me they are conceived in love. Others run into print with that sort of thing, and then it becomes dangerous."

His letters were full of thoughtful advice. When writing a bibliography and no doubt missing much of the man in my ardent search for bibliographic details, he brought me down to earth with the following:

"I have no right to advise you but I can tell you of my own experience. I began by thinking that no biographical or as a matter of fact any historical study was worthwhile that did not have a complete bibliography attached to it. I used to think that this was a sad lacuna in Osler's writings. I have come to completely change my mind. I now think it should be carefully avoided as a mere pretense of scholarliness, for two reasons: 1, because if to be done well it takes a great deal of time; 2, because the numeration of editions sheds light only on the effect of a man's work in the publicistic sphere, which has an importance but can well be stated without precise details. Of course you want to know what a man has written and for that you need bibliographical handles, but between that and a 'first-class bibliography' there is a great gap. I know that work over bibliographies has sapped much of my strength and so I fear for others. On the other hand I think the careful analysis of a man's work, his methods of approach to his problems, the way of his finding expressions for them, his connexion and collaboration with others, his attitudes to the world at large, in brief a real psycho-analytical approach in biography, not necessarily Freudian, is much needed."

When Harvey Cushing died, Klebs lost his closest friend. I wrote him some of the details of the funeral and Winternitz gave him by letter the autopsy findings. To Klebs this was a challenge for he wrote:

"Now here might be some work for you: H. C.'s clinical history. In his *War Journal* there are priceless descriptions of his sensations and symptoms as they came upon him with apparent suddenness. Then through the years that follow you may gather things about his troubling 'hindlegs' in notes and letters, till 'claudication,' 'endarteritis,' Berger's disease and other verbal symbolisms overshadowed the fundamental difficulty, till he had to die in that 'monkey cage' (oxygen tent) just because theory wanted to provide him with the Life gas through a blocked coronary plexus, as if Nature's masterpiece were nothing but a clumsy carburetor!! A very fine clinical study may be made out of his case. Even in his death he may radiate truth and warmth into the customary schema of clinical *supercherie*. Do collect these various auto-observations and when you have them together, the final make-up will suggest itself."

Let me read you one more quotation from a letter for it will illustrate Klebs' keenness in picturing words. When a medical librarian was about to celebrate his fiftieth anniversary as director of a well-known institution, Klebs, an artist to his finger tips, wrote as follows:

"He is a remarkable example of the barbarian neo-humanist, kindly, devoted and ever helpful, evidently an excellent administrator and boss, a keen sleuth after antiquarian treasures; rough and untidy for himself, but meticulous if not pedantic for all entrusted to him, superbly self-made in a job that needs multiple inspiration from living contacts."

And then he went on to discuss catalogues and manuscripts and incunabula, his life work.

"And now, of course, he is bound to get out another catalogue of manuscripts and incunabula, when there are already too many. If he will only do it in the direction of understatement! The temptation is always for thorough-going elaborateness. I pray that he may be brief and to the point. It is a curious thing that in this kind of work, it takes a much longer time to be brief than to let yourself go, loquaciously. It does me good to hear you talk nicely of my *List*. Its merit is its briefness, which I never could have accomplished except with the help of Mlle. Lang (to whom this is dictated for obvious reasons). I wish you success in your own listing endeavor. There is no teaching to be done on this subject, every one has to find out the principal point by himself. With the help that you can command, you ought to be doing well. It may look as if I were following entirely German examples, but in fact, my main inspiration has come from the S. G. Catalogue, of which Billings is the grand inspirator. And the astonishing thing is that from him down to Claudius Mayer, a remarkably original standard has been adhered to. The cataloguing of mss., I feel, has great possibilities of improvement in the line of simplification. It is very important, I should think, since each manuscript is, in a way, a unique edition."

And so we return home from our visit to two friends, now no longer living, but whose spirit still inspires us, even after the passing of years. They both exampled comradeship, that quality so ingrained in our profession, for both Osler and Klebs lived not for themselves but for others. To them a student became as a son, to be nurtured and molded as one of their own, a comrade walking the same path towards the betterment of mankind. Both had smooth and steadfast minds, "gentle thoughts and calm desires, hearts with equal love combined," to kindle never-dying fires.

THE HEALTH OF TOWNS ASSOCIATION IN GREAT BRITAIN 1844–1849

An Exposition of the Primary Voluntary Health Society in the Anglo-Saxon Public Health Movement

ROBERT G. PATERSON

Premise

> "*A voluntary campaign of popular education* may, under certain circumstances, exert as much influence upon health conditions as could the development of an *administrative program*. The final test of any means to an end must be stated in terms of results; in the case of an attempt at health control, in terms of vital statistics. Judged in this manner, the early British health movement seems a most significant one." [1]

Professor Shryock here draws the contrast in methods of approach to the public health problem facing society at a given time. Most of the emphasis given in the history of the public health movement in Great Britain has been on *legislative and administrative results* achieved by Sir Edwin Chadwick together with his successors, and only incidental attention has been paid to the role of *community health education* initiated by Dr. Thomas Southwood Smith in achieving those administrative results.[2]

Argument *

A little more than one hundred years ago—December 11, 1844,—there was initiated by Dr. Thomas Southwood Smith [3] a movement in England

[1] Shryock, Richard Harrison, *The Development of Modern Medicine—An Interpretation of the Social and Scientific Factors Involved*, Alfred A. Knopf, New York, First Borzoi Edition, 1947, p. 102; Italics not in original.

[2] Recent publications on the unofficial public health movement in the United States would lead one to assume that this development is an exclusively American phenomenon. See: Cavins, Harold M., *National Health Agencies; A Survey with Especial Reference to Voluntary Associations*, Washington, D. C., Public Affairs Press, 1945; and, Gunn, Selskar M., and Platt, Philip S., *Voluntary Health Agencies—An Interpretative Study*, New York, Ronald Press Co., 1945.

* I wish to record here my indebtedness to Dr. James M. Mackintosh, Dean of the London School of Hygiene and Tropical Medicine and to Dr. W. M. Frazer, Medical Officer of Health, Liverpool, England, for their critical examination of the manuscript and their helpful advice on moot points. My thanks are also due Miss Genevieve Miller, Acting Editor, *Bulletin of the History of Medicine*, Baltimore, Md. and Dr. Richard H. Shryock, Department of History, University of Pennsylvania, Philadelphia, Pa. for constructive suggestions.

[3] Lewes, Mrs. C. L., *Dr. Southwood Smith. A Retrospect*, W. Blackwood & Sons, Edinburgh and London, 1898.

known as "The Health of Towns Association." This association can be properly considered as the prototype of the numerous present-day voluntary and unofficial health organizations in both Great Britain and the United States.

No one in the least familiar with the literature of the modern public health movement can have failed to note references,[4] albeit fleeting, to the Health of Towns Association. But nowhere is there to be found a full exposition of the Association and its life-cycle.[5] The Health of Towns Association is important to an understanding of the Anglo-Saxon public health movement as it was among the first of a long and fertile series of voluntary and unofficial health organizations down to our own times. Further, it is important because it set the form for subsequent voluntary and unofficial associations in the public health field.

Newman in a discussion of voluntary[6] health societies says:

> The method of systematic propaganda of the anti-slavery movement, just before the French Revolution, not only won a signal victory for its cause but became forthwith the universal model for the conduct of hundreds of other voluntary movements—political, humanitarian, social, educational—which, as Trevelyan says, are "still the chief arteries of the life-blood of modern Britain."[7]

It is not surprising, therefore, that the fifteen years between 1833-1848 in Great Britain came to be called "The Public Health Agitation."[8] The roots of the movement are to be found in John Wesley and Methodism

[4] Lewes, Mrs. C. L., *op. cit.*, p. 107; Shattuck, Lemuel, *Report of a General Plan for the Promotion of Public and Personal Health*, Dutton and Wentworth, Boston, 1850, p. 45; Griscom, John, *Proceedings Third National Quarantine and Sanitary Convention*, New York, 1859, p. 241; Guy, William A., *Public Health—A Popular Introduction to Sanitary Science*, Henry Renshaw, London, 1874, p. 3; Simon, Sir John, *English Sanitary Institutions*, John Murray, London, 2nd Edition, 1897, pp. 212-213; Hutchins, B. L., *The Public Health Agitation 1833-1848*, A. C. Fifield, London, 1909, pp. 106, 113-115; Morris, Sir Malcolm, *The Story of English Public Health*, Cassell and Co., London, 1919, p. 8; Marston, Maurice, *Sir Edwin Chadwick*, Leonard Parsons, London, 1925, pp. 101-102; Hammond, J. L., and Barbara, *The Age of the Chartists 1832-1854*, Longmans Green and Co., New York, 1930, pp. 297, 299, 304, 353; Shryock, Richard Harrison, *op. cit.*, p. 233.

[5] This is confirmed by both Dr. Mackintosh and Dr. Frazer. An excellent discussion of the state of public opinion and the legislative struggles will be found in Hammond, *op. cit.*, Chap. XVI, pp. 291-313, entitled, "The Battle for Public Health."

[6] In Great Britain the term *voluntary* is used to designate the associations organized outside of Governmental auspices. In the United States we have a variety of terms used indiscriminately—private—voluntary—non-official—unofficial.

[7] Newman, Sir George, *The Building of a Nation's Health*, Macmillan and Co., New York, 1939, p. 446.

[8] Hutchins, B. L., *op. cit.*

(1727); John Howard and prison reform (1773); Wilberforce and the anti-slavery movement (1787); Romilly's successive reforms for humanizing the criminal law (1808-1818); Cobbett and parliamentary reform (1819); Chadwick and poor law reform (1832), and Lord Ashley and factory agitation (1833). In each of these activities, the accumulation of facts, the interpretation of them, the use of the interpretation in creating public opinion, and the crystallization of public opinion in legislative and administrative programs are clearly set forth in most of the discussions of the period. The public health movement followed the same technique as in these earlier fields of reform.

Mrs. Lewes [9] in her life of Dr. Southwood Smith wrote:

> The early workers in the public health movements, such as that for Sanitary Reform, have first to spread such a knowledge of existing evils as shall create a general feeling of the need for improvement. They have to educate the public until it believes in that need. And when the *vis inertia* of ignorance and indifference is overcome, they have to encounter the active opposition of those whose interests are bound up with the old abuses, and whose property would be affected were the evils swept away. Even when it is decided that something must be done they have to bear a long time of waiting until it is settled what that something is to be, for decision is not easy when questions arise which closely affect the property of a powerful class.

This quotation epitomizes the task undertaken by the Health of Towns Association. In the light of present-day experience this statement by Mrs. Lewes omits two important steps in a successful public health movement. First, before an organization is in a position to " spread such a knowledge of existing evils " it becomes necessary to accumulate such knowledge.[10] Second, such an organization needs to maintain its continuity even after its major objective has been attained. The history of the Health of Towns Association bears convincing evidence to both of these steps. The first of these was furnished by a long series of Official Governmental inquiries and the second was the subsequent development of the public health movement in Great Britain after the Health of Towns Association ceased its activities.

Early Efforts to Understand the Health Problem

As would be expected a number of early attempts to grapple with the leading causes of death are to be found in the English experience. Not

[9] Lewes, Mrs. C. L., *op. cit.*, pp. 102-103. Mrs. Lewes was a granddaughter of Dr. Smith.

[10] This process today goes under the general term " survey "—to ascertain the facts.

to be overlooked was the foundation of hospitals and dispensaries during the 18th Century. In 1736 the first county hospital was that for Hampshire established at Winchester. The first dispensary was founded in Red Lion Square for the Relief of the Infant Poor. By 1800 many dispensaries had been established in London and the movement spread rapidly throughout Great Britain. The foundation of hospitals and dispensaries had a twofold objective, to provide their benefits for the poor but also to serve as centers for the accumulating and spread of knowledge in the treatment of disease.[11]

> There was a time when the *Gaol Fever* (Typhus) was an ordinary disease that carried off judges, jurors and barristers; so attention was turned to it, and it has ceased; the *Scurvy* was once the scourge of our fleets; that was examined and remedied, it is now unknown; the small-pox has yielded to skill and legislation; and other afflicting evils will in time be added to the same catalogue.[12]

Twenty years ago Sir Arthur Newsholme [13] pointed out that:

> . . . before the activities of these early missionaries [14] of pity and health could have any prospect of success, individual and some degree of communal effort had been elicited in a number of centers, sometimes by physicians and notably in one instance by a prince of reformers, John Howard, who was not a doctor. . . . In studying the more generally known work of the sanitary period, from 1830 onwards, one must not overlook its anticipations in this earlier period.

John Howard and Gaol Fever

It is Howard's [15] (1726-1790) work in prison reform that is considered as the initial impetus to the development of the *Public Health Movement.*

In 1773 John Howard was appointed High Sheriff of Bedfordshire and began his investigations into the condition of the county and town gaols which continued into the next year. In 1774 he testified before parliament as to what he had seen in the gaols of England.[16] As a result of this report Parliament passed an act for the abolition of the fee system of paying gaolers and another for the betterment of the sanitary conditions of prisons.

[11] Buer, M. C., *Health, Wealth and Population in the Early Days of the Industrial Revolution*, George Routledge and Sons, London, 1926, Chap. X, pp. 126-136.

[12] *Illustrated London News*, 1846, November 14, Vol. 9, No. 237, p. 305.

[13] Newsholme, Sir Arthur, *Evolution of Preventive Medicine*, The Williams & Wilkins Co., Baltimore, 1927, p. 106.

[14] John Howard, Edwin Chadwick, Lord Shaftesbury, Florence Nightingale.

[15] Gibson, E. C. S., *John Howard*, London, 1901.

[16] Guy, William A., *John Howard's Winter Journey*, Thomas De La Rue & Co., London, 1882.

During the next two years he visited prisons in Great Britain and on the Continent, and in 1777 he published his observations in a volume entitled *The State of Prisons in England and Wales*. His recommended remedies for the conditions he found were cleanliness, fresh air, adequate diet, separation (isolation) and attention (better administration).

Later his interests widened from the study of gaols and gaol fever (typhus), he turned to the questions of disease prevention, visited the great European hospitals, and published careful notes and suggestions for the improvement of these in England.[17] The evils he saw were an injurious prejudice against washing floors; admitting fresh air; the rarity of bathing; the offensiveness of the air in the wards, especially at night; the amount of drinking and the lack of convalescent wards or places for the patients to go on discharge.

Howard's contribution to the public health movement was his systematic use of two of our chief modern means of ascertaining evils—the first, *inspection* to ascertain the exact circumstances and conditions, and, second, *reporting* with statistical summaries of ascertained facts.[18]

Shryock quotes Roberton's [19] criticism of Howard's work as follows:

> It is to be regretted that he confined his observations almost entirely to the gaols he visited. Why did he not investigate the surrounding country as well? "Only then," observed Roberton, "would he have rendered his work complete." [20]

Manchester Board of Health

Perhaps the first example of a voluntary public health organization in Great Britain was the Voluntary Board of Health in Manchester.[21] This organization came about during the winter of 1795-96 when a virulent outbreak of "fever" (typhus) in a cotton-mill at Radcliffe led to the creation of a committee of investigation on January 7, 1796 consisting

[17] John Howard, *The state of the prisons in England and Wales, with preliminary observations and an account of some foreign prisons and hospitals*, W. Eyres, Warrington, 1777; John Howard, *An account of the principal lazarettos in Europe*, W. Eyres, Warrington, 1789; Aikin, John M. D., *A View of the Life Travels and Philanthropic Labours of the Late John Howard, Esq.*, Maning & Loring, Boston, 1794; Baumgartner, Leona, Bibliography of John Howard, see: *Bulletin of History of Medicine*, 1939, Vol. 7, pp. 486-626.

[18] Newsholme, *op. cit.*, p. 109.

[19] Roberton, John, *Medical Police, etc.*, 2nd ed., J. J. Stockdale, London, 1812, p. xiiii.

[20] Shryock, *op. cit.*, p. 100.

[21] Harris, Henry, Manchester's Board of Health, *Isis*, 1938, Vol. 28, No. 76, pp. 26-37; Ferrier, John, *Medical Histories*, 3 Vols., W. Eyres, Warrington, 1792, Vol. 3, pp. 41-92.

of Thomas Percival, John Ferrier and other Manchester physicians on the staff of the Royal Infirmary. This committee declared its opinion that the disease was due to a lack of ventilation, overcrowding and fatigue owing to too long continued labor. Percival and his colleagues drew up a series of resolutions in which they emphasized the close confinement, the heat and impure air, the want of active exercise, night work and long hours of labor. They pointed out the effect that the resulting ill-health and lack of education would inevitably have on the next generation and advocated legal regulation by Parliament.

In May 1796 a fever hospital or "House of Recovery" [22] was opened in Manchester upon the initiative of Ferrier and under the supervision of the Voluntary Board of Health. This institution was successful in accomplishing its objective. In addition to the reduction of fever which was effected there was evidence that the methods adopted impressed the mill owners and artisans alike with the importance of cleanliness. There were two cotton-mill owners at the time who were interested in the welfare of factory children. David Dale, the Glasgow manufacturer who established a cotton-mill in Lanarkshire in 1784, provided very good conditions for the operatives. His mill became known as "one of the most humanely conducted factories in the Empire." Sir Robert Peel (1750-1830), the elder, first Baronet, was a cotton spinner who imported from the London workhouses deserted children and used them to work his factories in Lancashire. He was a member of Parliament and out of his own experience and the experience of Mr. Dale, of which Peel was undoubtedly aware, aided in carrying the Act of 1802. This materially helped to improve the hygiene of both homes and factories. As a result of these activities Parliament passed an Act in 1802 for the preservation of the health and morals of apprentices.

Social Reforms as Foundation for Public Health Agitation

The period of the "Public Health Agitation" was the natural outgrowth of economic, political and social changes that were making themselves manifest in Great Britain at the beginning of the 19th Century. At the time there were a number of diverse forces at work. One of these

[22] *The Reports of the Society for Bettering the Condition and Increasing the Comforts of the Poor*, W. Bulmer and Co., London, 1798, Vol. 1, No. 13—Extract from an account of the house of recovery, established by the board of health at Manchester, by Thomas Bernard, Esq., pp. 98-115.

forces was the utilitarian school of thought led by Jeremy Bentham [23] which influenced both Chadwick and Southwood Smith. Bentham advocated many reforms, among which were the Poor Laws and the need for an effective organization for the national health. Bentham had a profound belief in the *power of education* to procure health, happiness and utility. He was also a staunch supporter of *central administration*. Both of these ideas were later to become the keystone of action by Chadwick and Southwood Smith.

Another force was the widespread fear of an outbreak of cholera.[24] In the autumn of 1831 it appeared in the port of Sunderland, speedily spread to the Tyne and on to Scotland and by 1832 was in London. It was estimated (there was no system of registration until 1837) that in England and Wales there were 53,000 deaths from the disease. This epidemic provided a powerful impetus to sanitary reform.

A third force was the reform of the factory conditions [25] demanded by the people. A commission [26] was appointed in 1832 to investigate the question of factory labor. This led to the Factory Act of 1833 in which the principle of *full-time paid inspectors of Central Government* was established for the first time in English legislative history. There were four first appointed including the famous Leonard Horner (1785-1864).

A fourth force and the determining one in the public health agitation was the reform of the Poor Laws. In 1832 Parliament provided for a commission of nine persons, of which Chadwick was a member, to inquire into the practical operation of the laws for the relief of the poor in England and Wales, and to investigate the growing evil of pauperism. In this inquiry the close connection between poverty and disease comes into sharp focus. Their report was the basis of " An Act for the Amendment and better Administration of the Laws relating to the Poor in

[23] Lundin, Hilda G., *The Influence of Jeremy Bentham on English Democratic Development*, University of Iowa, Studies in the Social Sciences, Iowa City, First Series, No. 37, November 1920.

[24] Cholera, called " the great teacher," appeared in Great Britain as a general invasion in 1831-33; 1848-49; 1853-54; 1865-66. There were small localized outbreaks in 1873, 1883 and 1893. " The chief importance of these epidemics, from the hygienic point of view, lay in the impetus they gave to sanitary reform." See: Delmage, J. Anthony, *Toward National Health*, The Macmillan Co., New York, 1932, p. 178.

[25] Mantoux, Paul, *The Industrial Revolution in the Eighteenth Century*, Rev. ed., translated by Marjorie Vernon, The Macmillan Co., New York, 1935; Driver, Cecil, *Tory Radical. The Life of Richard Oastler*, Oxford University Press, New York, 1946.

[26] Members of this Commission appointed by Lord Melbourne were: Southwood Smith, Edwin Chadwick and Thomas Tooke.

England and Wales," which was passed August 14, 1834. This Act placed the whole pauper system under the management of three commissioners and a principal secretary. The principal secretary was Edwin Chadwick.

A fifth force was the appointment by Parliament on March 28, 1833 of a select committee of twenty-seven individuals [27] " to consider and report on the general state of parochial registers, and the laws relating to them; and on a general registration of births, baptisms, marriages, deaths and burials in England and Wales." A report was made by the Committee on August 15, 1833 which led to an " Act for the Registration of Births, Marriages and Deaths in England and Wales " passed on June 6, 1836 and effective July 1, 1837. Under this Act a central office was established in London and administered by the Registrar-General of Births, Deaths and Marriages. The first Registrar-General was Mr. T. H. Lister, appointed in 1837. He was succeeded in 1842 by Major George Graham who held the post till 1879.[28]

Beginnings of Sanitary Inquiries

In 1838 Chadwick, as secretary to the Poor Law Commissioners, was asked to inquire into an outbreak of fever in Whitechapel. He persuaded the Poor Law Commissioners to appoint a medical inquiry and thus the first Governmental Sanitary Commission,[29] composed of Dr. Neil Arnott,

[27] Among whom were Lord Viscount Morpeth and Lord John Russell.

[28] The first National Census in England was taken in 1801. From that time the idea of the necessity of a National vital statistics bureau, replacing the local parish registers, grew. In 1838 Dr. William Farr was appointed superintendent of the Statistical Department of the Registrar-General's Department under this law, and his work had great influence upon the later public health movement. He served until 1879. See: *Encyclopedia of Social Sciences*, Macmillan Co., New York, 1937, vol. 6, p. 133; Sir John Simon, *English Sanitary Institutions*, pp. 211-212.

[29] This was the first instance in English history in which physicians were *employed* by the Government to gather *social facts* for possible parliamentary action. In 1720 the threatened invasion of plague led the Government to ask Dr. Richard Mead to advise it on how to combat the threat. He published his advice in *A Short Discourse Concerning Pestilential Contagion and the Methods to be used to Prevent It.*" (1st ed. 1720.) He believed the plague contagious, urged strict quarantine, recommended isolation of the sick from the well, urged the need of a Council of Health as a central authority to supervise local officers. In addition he gave advice upon avoidance of infection—avoid crowds; keep at a distance from sick and dead bodies; and use of sulphur fumes as a means of fumigating places inhabited by those who had had a contagious disease.

In 1805, on the occasion of the Gibraltar sickness, the Privy Council set up a consultative Board of Health. In 1831 with the threatened invasion of cholera, the Government sent two Medical Commissioners, Dr. William Russell and Dr. David Berry to St. Petersburg, to study the disease. Later in the year the report of these Commissioners was published

Dr. James Phillips Kay (later Sir J. P. Kay-Shuttleworth) and Dr. Southwood Smith, came into being. In May 1838 Drs. Arnott and Kay submitted a "Report on the Prevalence of Certain Physical Causes of Fever in the Metropolis, which might be removed by proper sanitary measures." Dr. Southwood Smith presented his famous "Report on Some of the Physical Causes of Sickness and Mortality to which the Poor are particularly exposed, and which are capable of removal by Sanitary Regulations; exemplified in the present condition of the Bethnal Green and Whitechapel Districts," and in April 1839 another report "On the Prevalence of Fever in Twenty Metropolitan Unions and Parishes during the year ending 20th March 1838."

As a result of these reports the Poor Law Commissioners sent a communication to the Home Secretary, Lord John Russell, urging amendment to the law to provide for *all* of the expenses which might be incurred in the interests of the poor. It further pointed out the heavy burden thrown upon the poor-rates by sickness and epidemics which were produced by bad sanitary conditions. In their opinion, the Poor Law Commissioners said, it was economically expedient *to meet any cost for the prevention of such sanitary evils.*

From this time on, events moved inexorably forward. Lord John Russell, then secretary of the Home Department, on motion of Blomfield, Bishop of London, addressed a letter to the Poor Law Commissioners dated August 21, 1839 directing them to inquire "As to the extent to which the causes of disease, stated in these reports to prevail among the labouring classes of the Metropolis prevailed also among the labouring classes in other parts of England and Wales." Later, an additional instruction extended the inquiry to Scotland. The Commissioners began this inquiry through the agency of their Secretary Edwin Chadwick in November 1839.

On March 12, 1840, Mr. Robert A. Slaney obtained, from the House of Commons, a Select Committee "to inquire into the circumstances affecting the health of the inhabitants of large towns with a view to improved sanitary arrangements for their benefit." In consequence of the evidence brought before this Select Committee, which reported on June 7, Lord

for general information. In June, a Royal Proclamation notified the public of the establishment of a consultative Board of Health. This Board drew up Rules and Regulations but medically they did not represent any advance on what Dr. Mead advised in 1720. These all had to do with the establishment of the *medical facts* in the face of threatened epidemics.

Normanby[20] introduced in 1841 the first sanitary bill in English history entitled "The Drainage of Buildings Bill."

Mr. Chadwick prosecuted his inquiries during 1840 and 1841 and on July 9, 1842 produced his memorable and invaluable *Report on the Sanitary Conditions of the Labouring Population of Great Britain and on the Means of Its Improvement.*[21] In this same year Lord Normanby introduced his bill for promotion of the public health and to carry out the recommendations of the Slaney Committee, but was defeated. During the session of Parliament in 1843, Lord Normanby made a second attempt to secure passage of his public health bill. Again he was defeated.

Now came another inquiry. Sir Robert Peel's government, soon after coming into office, appointed a Royal Commission (known as "The Health of Towns Commission") of which the Duke of Buccleuch was chairman "to inquire into the state of large towns and populous districts. . . ." Their reports[22] were presented and furnished an overwhelming mass of evidence of the existing insanitary conditions but during this session of Parliament no bill bearing on sanitary subjects was even introduced.

Organization of the Health of Towns Association

Dr. Southwood Smith was an active participant in all these inconclusive efforts covering five years—1839-1844—to secure action by the Government for the improvement of health of the people of Great Britain. He was also an acute observer of the forces of ignorance, indifference and selfishness that obstructed the movement. As a result of his experiences he decided to try to bring together distinguished men who had taken an interest in the cause and who had been active participants in the work. He hoped that as a united body they would have more power in spreading the information which had been amassed and in forcing it upon the attention of the public and Parliament. He also had the thought that such a

[20] "Next year (1841) Southwood Smith who had already enlisted Dickens' powerful interest brought the facts before two men who wielded influence of another kind. He took first Lord Normanby, and then Ashley, over the slums of Bethnal Green and Whitechapel. Normanby . . . after his first visit was ardent for action and lost no time in introducing two Bills—the Borough Improvement Bill and the Drainage of Buildings Bill." Hammond, J. L., and Barbara, *Lord Shaftesbury*, Constable & Co., London, 4th ed. 1936, pp. 156-157. Anthony Ashley Cooper became Lord Ashley and upon the death of his father he became the Seventh Earl of Shaftesbury.

[21] This report was a return to the Bishop of London's Motion of 1839, Lewes, Mrs. C. L., *op. cit.*, p. 105.

[22] Health of Towns Commission First Report, June 27, 1844; Second Report, Feb. 3, 1845. See: Simon, John, *op. cit.*, pp. 197-202.

body of men acquainted with the subject would be useful in suggesting and discussing remedies and in proposing legislative measures.

Accordingly the first meeting[32a] of the Health of Towns Association was held at Exeter Hall, London, December 11, 1844. The Chairman of the meeting was the Marquis of Normanby; the treasurer, the Hon. J. T. Leslie Melville, and the Honorary Secretary, Henry Austin, a civil engineer. There were sixty-nine members on the Committee[33] for organization, among whom were Lord Ashley, M. P.; Lord Morpeth, M. P.; Viscount Ebrington, M. P.; Benjamin D'Israeli, Esq., M. P.; R. A. Slaney, M. P.; R. D. Grainger, F. R. S.; William Ewart, M. P.; Hector Gavin; M. D.; William A. Guy, Esq., M. D.; John Simon, F. R. S.; T. Southwood Smith, Esq., M. D., and John Sutherland, M. D.[34] It will be noted that Edwin Chadwick, because of his official position, refrained from taking any part in the organization although he was sympathetic to the purposes of the Association and aided it in many ways.

The purposes of the Association[35] were the diffusion and popularization

[32a] Attention should be called to the errors in dates assigned to the organization of the Health of Towns Association, as follows: *Journal of Public Health*, 1849, vol. II, p. 67 gives— *November 1844*; Shattuck, Lemuel, *Report of the Massachusetts Sanitary Commission*, 1850, pp. 44-45 gives—*November 1844*; Marston, Maurice, *op. cit.*, pp. 202-203 gives—*1839*.

The correct date of *December 11, 1844* is given by: Lewes, Mrs. C. L.: *op. cit.*, pp. 98, 107; Hutchins, B. L., *op. cit.*, pp. 106-107.

[33] In England the word "Committee" corresponds to our American "Board of Directors."

[34] Subsequent annual meetings of the Health of Towns Association were held, as follows:

1845 (No information available and probably no meeting)*
1846 (No information available and probably no meeting)*
1847, December 11 at Hanover-Square Rooms, London.
1848, February 23 at Statistical Society Rooms, London.
1849, May 17 at Statistical Society Rooms, St. James's Square, London.

* It is suggested by Dr. Mackintosh that in 1844 the Association started as a non-party affair and that in 1845 and 1846 no association could be non-party owing to the acuteness of the political situation. It was only after the Corn Laws and after Peel had gone that an association with Whig and Tory members on its managing body could get it going again. Personal Communication 1 April, 1948.

[35] Simon, Sir John, *op. cit.*, pp. 212-213. Simon's estimate of the Association is as follows: "In conclusion, . . . while the interests of the public health were frequently under discussion in Parliament, the growth of unofficial knowledge and sympathy in relation to the movement was shown by the rise of various voluntary associations intended to promote sanitary reform. There was a so-named *Health of Towns Association*, which particularly aimed at diffusing and popularizing the sort of knowledge which had been before Parliament. And there were those signally educational associations which taught by example: the so-named *Association for Promoting Cleanliness Among the Poor*, which founded in the East-end of London a Model Establishment of Baths and Wash-

FIRST MEETING OF THE HEALTH OF TOWNS ASSOCIATION.

(From an Old Print.)

of the information on the physical and moral evils arising from existing insanitary conditions, the correction of misconception as to expense, and the removal of groundless apprehension as to interference with pecuniary interests, the promotion of local sanitary inquiries and improvements, and the encouragement of local sanitary associations.[86]

The Committee expressed its conviction for the need of an active control body to concentrate and direct to prompt action the intelligence already existing on the question of sanitary improvement. This central body was the Health of Towns Association. Composition of the Committee was drawn from the nobility, the clergy, members of Parliament, the professions of engineering, medicine, and education and laymen.

To finance the organization, contributions were solicited on the ground that the Association was not a *charity* but aimed at preventing the evils which charities endeavored to palliate. "It would substitute Health for Disease, cleanliness for filth, order for disorder, economy for waste, prevention for palliation, justice for charity, enlightened self-interest for ignorant selfishness and bring home to the poorest and meanest amongst us, in purity and abundance, the simple blessings which ignorance and negligence have long combined to limit or to spoil—*Air*, *Water*, *Light*." [87]

Local Auxiliary Associations became known as Provincial Branches of the Health of Towns Association. One of the early such provincial auxiliaries was the Liverpool Health of Towns Association [88] convened by the Mayor and organized April 23, 1845 at Sessions House, Chapel Street. This auxiliary was the most active of all such associations between 1845 and 1847. It set the pattern of operations which the Health of Towns Association later adopted.

Muir, in his *History of Liverpool*, says that the Town Council elected in 1835 under the Municipal Corporation Act of 1835 was an "energetic, reforming Council which began vigorously to deal with police, sanitation,

Houses, and afterwards procured the passing of the Baths and Wash-Houses Act; and two Associations which, under slightly different names, established Model Lodgings at low rent, viz.,—founded in 1841, the *Metropolitan Association for improving the Dwellings of the Industrious Classes*; and, founded in 1844, the *Society for the Improvement of the Condition of the Labouring Classes*." This was all Simon, in his excellent and scholarly book, had to say about the "Health of Towns Association!"

[86] See Appendix I for Objects and Rules adopted by the Health of Towns Association.

[87] Hutchins, B. L., *op. cit.*, p. 114.

[88] *Health of Towns Advocate*, Sept. 1, 1845, No. 1, p. 8.

Subsequent annual meetings of this Association were held as follows:

1846, February 27 at Concert Hall, Lord Nelson Street.
1847, February 26 at Music Hall, Bold Street.

lighting and cleansing." Upon its initiative were secured the Liverpool Improvement Act and the Liverpool Building Act in 1842. The Liverpool Sanitary Act of 1846 was one step ahead of similar legislation elsewhere and it may well explain the forward looking developments in the Liverpool Health of Towns Association.[39]

"The Liverpool Health of Towns' Advocate"

On August 13, 1845, the Liverpool Association, upon the suggestion of Adam Hodgson, Esq., decided to publish a monthly periodical. The first issue of *The Liverpool Health of Towns' Advocate*[40] came off the press on September 1, 1845. Its sub-title stated that it was "published under the sanction of the Committee of the Liverpool Health of Towns Association."[41] The editor was John Sutherland, M. D.[42] and the publisher J. Walmsey, Liverpool. The journal was issued on a monthly basis for sixteen numbers from September 1, 1845 to December 1, 1846. Fifteen hundred copies were printed and distributed gratuitously. Owing to stringent financial conditions the journal was forced to go on a bi-monthly basis with 1,000 copies being printed from January 1, 1847 to July 1, 1847, when it ceased publication with Number 20.

Headquarters

Sometime late in September 1845, the Liverpool Association set up an office to serve as headquarters.[43] This office was located in Fenwick Chambers, Fenwick Street, at a yearly rent of £25 and was abandoned January 1, 1847 due to lack of funds. From April 23, 1845 the Association met in the Liverpool Town-Hall by courtesy of the Mayor.

This central office served for the reception of models and diagrams and for the transaction of the business of the Association. When the Fenwick Street offices were abandoned on January 1, 1847, the headquarters were moved to the office of Thomas Moore, 4 India Building, Water Street.[44]

[39] See Frazer, W. M., *Duncan of Liverpool*, Hamish Hamilton Medical Books, London, 1947, p. 33.

[40] *First Annual Report of the Committee of the Liverpool Health of Towns Association, The Liverpool Health of Towns' Advocate*, No. I, p. 67.

[41] So far as can be ascertained copies are in: Yale University Library (Nos. 1-13); Army Medical Library (Nos. 1-19); Boston Medical Library (Nos. 1-20). Winifred Gregory, Ed., *Union List of Serials in the United States and Canada*, 2nd ed., 1943, p. 1603.

[42] John Sutherland, M. D. (1808-1891).

[43] *The Liverpool Health of Towns' Advocate*, Oct. 1, 1845, No. 2, p. 9.

[44] *Ibid.*, Jan. 1, 1847, No. 17, p. 164.

Agent

Due to the increasing business of the Association, a salaried agent [45] was employed probably in August 1845. He was in attendance at the headquarters office daily between 12.00 M. and 3.00 P. M. for the transaction of business, at which time the public could view the diagrams and apparatus that the Association had developed and installed. The first agent was Thomas Moore, and later J. Travis was employed.

Finances

During the first year's operation the Association had £257 to carry on its work.[46] This sum came from donations, subscriptions, discount on bills and bank interest. The year's expenditures amounted to £141 devoted to rent, printing and advertising, the *Health of Towns' Advocate*, the agent's salary, purchase of pamphlets from the Central Association, public meetings, lectures, apparatus and sundry items. The cash balance at the close of the year was £115.

Plans of Operation

The main Committee had three plans of operation: first, extensive gratuitous distribution of tracts and pamphlets; second, lectures or addresses at frequent intervals, and third, the collection of diagrams and apparatus.[47] These three main activities were entrusted to sub-committees: one on Publications; one on Lectures, and one on Diagrams and Apparatus. The sub-committee on lectures organized a Liverpool Association of the Working Classes before which Mr. James Simpson, Advocate and Honorable Secretary of the Edinburgh Branch of the Health of Towns Association as lecturer gave many talks designed to form a favorable public opinion on the objectives of the Association.

At the first annual meeting of the Association held on February 27, 1846, the Report of the Committee, among other things, deemed it necessary to meet objections to its very existence in the following language:

It has been supposed that our object was:

1. To engage directly in the promotion of sanitary improvements, by raising and application of funds for the purpose.

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[45] The English "Agent" or "Acting Secretary" is equivalent to our present-day title "Executive Secretary" or "Managing Director."

[46] See Appendix II, Tables 1 and 2 for complete financial statements for the years 1845-6 and 1846-7.

[47] This title corresponds to what we in America call "Exhibits."

2. That the Association was founded in a spirit of hostility to the local authorities whose functions it was intended to interfere with or supersede.

The real object, [the Report said] is the diffusion of knowledge, and the excitement of attention and inquiry, in reference to this important subject, as the most effectual means of removing the apathy, and obviating the prejudices and fears by which the local and general authorities may be obstructed in their efforts for the public benefit.[48]

Health of Towns Association

Between 1845 and 1847 the Health of Towns Association apparently confined its efforts to holding public meetings, the organization of the working classes, and the printing of pamphlets.

The forming of a working class organization was effected by the Health of Towns Association sometime in 1846 under the name of "The Metropolitan Working Classes Association for Improving the Public Health." The officers elected were:

President	The Right Rev., The Lord Bishop of London.
Vice-President	Viscount Morpeth, M. P.
Treasurer	Joseph Toynbee, Esq., F. R. S.
Hon. Secretary	Thomas Wilson

There was a list of twenty-one Patrons among whom were Lord Ashley, M. P.; Viscount Ebrington, M. P.; R. A. Slaney, Esq., M. P.; The Hon. W. Cowper, M. P.; Sir Edward Bulwer Lytton, Bart.; James Simpson, Esq. and Dr. Southwood Smith. The Governing Committee consisted of twenty-four members which met on the last Friday each month at 29 Great Marlborough Street, London.

The first address from the Committee[49] outlined the situation confronting the working classes, as follows:

The Working Classes have lately become aware that they suffer much disease and misery, both in body and mind and from the presence of causes, many of which might be removed, and others much lessened. They have, therefore formed themselves into an Association for Improving the Public Health; and in the present address they intend briefly to state the chief matters which the Society has to labour at, and to show how their objects can be carried out. It will be remarked that this Association differs from all Charitable Societies, inasmuch as it aims at the prevention, instead of the palliation of evils.

The Objects of the Association were stated, as follows:

[48] *Liverpool Health of Towns' Advocate*, Vol. 1, No. 8, April 1, 1846.
[49] *The First Address from the Committee*, John Churchill, London, 1848.

1. To diffuse information very extensively among the Working Classes, by addresses from the Committee, Lectures, Public Meetings, Pamphlets, the formation of Libraries and every other available means, showing the evil effects on the health and moral condition produced by bad ventilation, imperfect drainage and sewerage, burials in towns, deficient warmth and exercise, and by a neglect of cleanliness in their persons, houses and workshops.

2. To point out the most effective and economical means of removing the evils alluded to, by describing plans for ventilation, warming, drainage and bathing; to state the cost of these plans, and where they can be obtained and seen in operation, and to attempt to get them carried out at as little cost as possible.

3. To use every effort to obtain a more abundant supply of pure water, and to secure better means of carrying away that which has been used.

4. To endeavor to ascertain the sources of impurity in the articles of food and drink in general use, and to adopt measures to remove them.

5. To diffuse among the wives of working-men information respecting the best means of nursing, feeding, and clothing their children, and to point out the most efficacious plans for the preservation of their health.

6. To seek assistance in procuring open spaces of land for conversion into public grounds for manly exercises; and by thus securing the means of healthful recreation and amusement among the working-classes, to afford facilities for the advancement of temperance and sobriety.

7. To prevent the enclosure of the heaths and commons, and the stopping up of the field-paths, foot-paths, and other rights of way, in the neighbourhood of London, by publishing accurate maps of their position and extent at a cheap rate.

8. To encourage and assist the formation of District Societies having objects similar to those of this Association.

So far as can be ascertained this Association ceased operations in 1849. The Health of Towns Association distributed and sold pamphlets [50] to the Provincial Branches. The second Report of the Health of Towns Commission was published February 3, 1845 and made the question of sanitary improvement one of paramount importance. In Her Majesty's speech, which opened Parliament in 1845, it was announced that the Report was to be laid before that body at once. The Earl of Lincoln introduced a bill in July 1845 relating to sewerage and drainage of towns based upon the conclusions of the Report, but he explained that he did not ask Parliament to pass it in that session. The Government of Sir Robert Peel, however, desired that it be discussed during the approaching recess, and that it be reintroduced near the opening of the next session of Parliament. However, the Act for the Repeal of the Corn Laws [51] was passed in

[50] See Appendix III for list of publications.

[51] Not to be overlooked in the work of propaganda was the enactment by Parliament in 1839 of a proposal by Rowland Hill to have the Government charge a uniform postal rate;

June 1846, and Lord Lincoln failed in his intention due to the Prime Minister's resignation.[52]

The Health of Towns Association issued a " Report on Lord Lincoln's Bill " [53] which analyzed the provisions in a critical manner. This publication by the Association was one of the ablest reports ever written on the sanitary question. Dr. Southwood Smith was the sole author of this report.

On March 30, 1847, a bill similar to Lord Lincoln's was introduced by Lord Morpeth who was Commissioner of Woods and Forests in Lord John Russell's government. Strong opposition to the bill developed. The several phases of this opposition were the fear of despotic central authority; fear of jeopardizing vested property rights; fear of innovations, and fear that London would be included.

This was the legislative situation when a threat of a cholera epidemic brought the Health of Towns Association into renewed activity. It began an earnest educational campaign following the previous pattern laid down by the Liverpool Health of Towns Association. The Association began the circulation of Petitions [54] to Parliament and between the first reading of the Health of Towns Bill on March 30th and June 24th, when the Bill was withdrawn, there were presented, in favor of the Bill, 306 petitions containing 40,985 signatures; and against the Bill, 22 petitions, containing 334 signatures. It was in this connection that Dr. Southwood Smith wrote his incisive " An Address to the Working Classes of the United Kingdom on their Duty in the Present State of the Sanitary Question." It is dated January 1, 1847 and was designed to arouse the working classes to support the petitions.

In September 1847 the Association employed Thomas Beggs as Acting Secretary to transact the business of the Association; to visit the larger towns of the Kingdom for the purpose of organizing branches; and to give public lectures on the necessity for sanitary legislation. Headquarters were set up at 10, Walbrook, City, London.

At this time, November 1847, it was stated that in addition to the

to reduce the price to one penny; and to secure prepayment by the use of a stamp. The increased facility in the use of the mails came just in time to aid powerfully in the Corn Law Agitation and all subsequent propaganda causes.

[52] However, the Ten Hour Bill passed May 2, 1847.

[53] *Report of the Committee to the Members of the Association on Lord Lincoln's Sewerage, Drainage, etc. of Towns Bill,* Charles Knight & Co., London, 22 Ludgate Street, 1846, p. 122.

[54] See Appendix IV for the form of the Petition.

Association, there were only thirteen[55] provincial branches in existence. During the next six months, owing to the activities of Mr. Beggs, provincial branches spread throughout Great Britain.

In November 1847, appeared the first number of a monthly publication, the *Journal of Public Health and Monthly Record of Sanitary Improvement*.[56] It was issued under the sanction of the Metropolitan Health of Towns Association. The editor was John Sutherland, M. D., member of the Committee of the Metropolitan, and secretary of the Liverpool Health of Towns Association and late editor of the Liverpool *Health of Towns' Advocate*. The publisher was Henry Renshaw, London. Volume I ran from November 1847 to October 1848. Volume II ran from November 1848 to October 1849, and was edited by Hector Gavin, M. D.[57]

The Association also began publishing a "Weekly Sheet of Facts and Figures" designed to supply the newspapers throughout England with timely information about the sanitary cause. This effort continued for about six months during the latter half of 1847 and was then discontinued.

At a preliminary meeting of the Committee and of the more immediate friends of sanitary reform held on December 10, 1847 in the rooms of the Statistical Society, St. James's Square, London, Dr. W. A. Guy gave an extended report upon the activities of the Association since it was founded. He stated that 75,000 copies of various publications had been distributed and that numerous lectures had been delivered by Mr. R. D. Grainger, Mr. Joseph Toynbee and himself.

On the next day, December 11, 1847, the third anniversary meeting of the Association was held at the Hanover-Square Rooms with the Marquis

[55] These were organized in Liverpool, Manchester, Edinburgh, York, Halifax, Bath, Derby, Walsall, Marlborough, Plymouth, Worcester, Rugby, and Newcastle-on-Tyne. *Journal of Public Health*, 1847, Vol. 1, No. 1, p. 30.

There was also a Health of London Association organized sometime late in 1847. Its officers were: Patron: Lord Ashley; Vice-Presidents: Alderman Sir James Duke, M. P.; B. Bond Cabbell, Esq., M. P., F. R. S.; W. A. Mackinnon, Esq., M. P.; David W. Wire, Esq.; T. Southwood Smith, Esq., M. D., L. R. C. P.; W. Vesalius Pettigrew, Esq., M. D.; B. Travers, Esq., V-P. R. Coll. of Surg.; Hon. Secretaries: The Rev. M. W. Lusignan; John Liddle, Esq., Surgeon.; Asst. Hon. Secretary: M. M. Davies. There was an Acting Committee of 29 among whom were Henry Austin and H. Gavin.

[56] So far as can be ascertained copies are in: Army Medical Library; New York Academy of Medicine Library; Ohio State University Library; and Cincinnati Public Library. See Gregory: *Union List of Serials in Libraries of the United States and Canada*, H. W. Wilson Co., New York, 2nd ed., 1941-1943, p. 1464.

[57] Dr. Sutherland became an inspector on the staff of the General Board of Health in September 1848 and found he did not have time to continue editing the *Journal*. Dr. Gavin succeeded him in October 1848.

of Normanby, President of the Association, in the chair. Among the resolutions adopted by the meeting was the following:

That although great exertions have been made by Sanitary Associations, ably seconded by the press, to arouse the public mind to a sense of evils (physical, economical and moral) which affect all classes, but especially the poorest, much ignorance and apathy still remain; and that this meeting, while it pledges itself to aid the Health of Towns Association in the efforts now making for their removal, would especially call upon the *clergy* and members of the *medical* profession to exert their powerful influence in furtherance of this great object.[58]

In January 1848 the effects of this resolution were seen in the organization of "A Medical Sanitary Society" in Hull and this method of securing support of the medical profession was followed in many localities throughout England. At the same time the Bishop of London issued a Pastoral Letter urging the clergy to take cognizance of the effect of insanitary conditions upon the moral and physical well-being of the poor. This led to the formation of district sanitary societies under the guidance of the clergy.

A second resolution was adopted as follows:

That this meeting regards with lively satisfaction the earnest recommendation contained in the speech from the throne; the expressed determination of Her Majesty's advisors to renew the efforts made by Lord Lincoln and Lord Morpeth in former sessions of Parliament; and the practical step taken by the Lord Chancellor in remodeling the Metropolitan Sewer Commissions.[59]

Lord Morpeth introduced his "Bill for Promoting the Public Health" on February 10, 1848. It was read a second time without opposition on March 21. The bill was amended and came up for third reading and passed the House on June 19. There was only one vote against it.[60] The bill passed the House of Lords July 27 and received Royal Assent on August 31, and thus became known as "The Public Health Act of 1848."[61] This Act did not apply to Ireland, Scotland nor to London.[62] On September 26 the *London Gazette* announced that the Queen had appointed

[58] *Journal of Public Health*, vol. 1, p. 80. Italics not in original.

[59] *Journal of Public Health*, vol. 1, p. 80.

[60] ". . . Chief opponents were the Protectionist leaders, Lord George Bentnick, Sibthorp and Bankes"—"The opposition was led in the Commons by Urquhart . . . and outside by Toulmin Smith, who published books and tracts denouncing centralization . . . ." See: Hammond, J. L., and Barbara, *Lord Shaftesbury*, pp. 161-162.

[61] See: *Journal of Public Health*, vol. 1, pp. 138, 166, 221, 222, 251. Note p. 221 especially for account of opposition tactics.

[62] 11th and 12th Victoria, c. 63.

Anthony Ashley Cooper, Esq. (commonly called Lord Ashley) and Edwin Chadwick, Esq., C. B. to be members of the General Board of Health. Lord Morpeth, Her Majesty's First Commissioner of Works, was the ex-officio member of the Board. Chadwick was the paid member of the Board.[63] At the same time this legislation was being enacted there was another public health measure also on its way through Parliament. This was known as the "Nuisance Removal and Diseases Prevention Act."[64] This law applied throughout the United Kingdom.

Throughout the remainder of 1848 and through 1849 the Health of Towns Association was hard at work endeavoring to secure the extension of the provisions of the Public Health Act of 1848 to Ireland, Scotland and London. They were also agitating for the appointment of a medical man as a member of the General Board of Health, and were successful when the Queen announced on October 5 the appointment of Thomas Southwood Smith, M. D. as a member.[65] In a report to the fifth annual

[63] Henry Austin became the Secretary of the General Board of Health and Dr. John Sutherland was appointed a medical superintending inspector.

[64] 11th and 12th Victoria, c. 73.

[65] "Whitehall, October 5, 1848. The Queen has been pleased to appoint Thomas Southwood Smith, M. D. to be the medical member of the General Board of Health."—Bulletins and Other State Intelligences, 1848. From the *London Gazette*, p. 325; *Annual Register for the year 1848*, Appendix to Chronicle, p. 287; Lewes, Mrs. C. L., *op. cit.*, p. 131; *Journal of Public Health*, vol. II, November 1848, p. 28.

There seems to be a prevailing opinion among public health officials in England that the Medical Member of the General Board of Health was appointed under the Metropolitan Interments Act, 1850. This belief may be due to a statement contained in Simon's *English Sanitary Institutions*, p. 209, to wit: "It will, however, hereafter be seen that, two years later, a new Act of Parliament empowered the Board to have a paid medical member as part of its ordinary constitution," and, in Sir Malcolm Morris' *The Story of English Public Health* where it is recorded on p. 31, "At first the General Board of Health consisted of an ex-officio member, . . . and two members appointed by the Crown, one paid, the other unpaid. Neither of the three was a medical man. The time had not quite come to recognize the medical profession as entitled to any direct voice in health administration. Within two years, however, a permanent medical member in the person of Dr. Southwood Smith was added to the Board under a Burials Act then passed, the Metropolitan Interments Act, 1850."

In addition to the official statement of appointment there is further evidence that the appointment took place as given in a "Report by the General Board of Health on the Measures Adopted for the Execution of the Nuisances Removal and Diseases Prevention Act, and the Public Health Act up to July 1849. Presented to both Houses of Parliament by Command of Her Majesty." This report is signed on page 72 by Carlisle, Ashley, Edwin Chadwick, T. Southwood Smith. In an appendix III to this report the Regulations of the General Board of Health is signed—"Given Under Our Hands and under the Seal of the General Board of Health this Third Day of November One thousand eight hundred and forty-eight. Carlisle, Edwin Chadwick, T. Southwood Smith."

The difficulty seems to lie in the fact that Southwood Smith was appointed in 1848

meeting held on May 17, 1849, it was stated that a total of £1500 had been expended by the Association in the five years of its existence. And throughout this time the Association had great financial difficulty in keeping the work going.

In the October 1849 issue of the Journal, the editor wrote an editorial,[66] in which he said:

> It is no little satisfaction to us to know that our principles have been thus practically acknowledged to be correct, and have been universally adopted. Preventive Medicine now occupies its just place in the Arts and Sciences which promote the welfare and happiness of man. . . . It is not unfair to claim for the Journal of Public Health some share of the credit which is due for enlightening the community as to the evils under which they suffer, and for pointing out the real and efficient means by which the remedying of these evils was to be reduced to practice. . . . *The Association had nearly fulfilled the objects for which it was instituted; and the Journal must necessarily soon cease to be its recognized organ.*[67]

Subsequent events revealed how mistaken the editor was in his statement that the objects of the Association were nearly fulfilled. The Public Health Act constituting the General Board of Health was to run for a term of five years. Between 1848 and 1854 it was repeatedly shown that the people as well as the members of Parliament were in sore need of sanitary education.

The functions of the General Board of Health were to create Local Boards of Health when petitioned by one-tenth of poor-rate payers (not being less than thirty in the whole) of any city, town, borough or place, having a known or defined boundary. It could also institute an inquiry, and take the right steps thereon, in all cases where it shall appear that the proportion of deaths in any place from typhus fever, diarrhoea, scarlatina or other febrile, epidemic, endemic, and contagious diseases classed in the Registrar-General's return as "zymotics" have, on an average of three years previously to obtaining such return, exceeded the proportion of 20 percent of the total deaths, or have exceeded the average rate of deaths from such causes, either in the registration districts, or the general average of such deaths in the registration districts, including other towns in the whole kingdom, as shown by any returns, made or to be made, by the Registrar-General.

as medical member of the General Board of Health giving his services gratuitously at first but receiving a permanent paid appointment in 1850 when he gave up professional practice. See: *D. N. B.*, vol. 18, p. 544.

[66] *Journal of Public Health*, October 1849, vol. 2, p. 323.

[67] Italics not in the original.

The General Board of Health also was given authority to promulgate any measures which might be necessary, during the prevalence of epidemics under the Nuisance Removal and Diseases Prevention Act.

Local authorities were given wider administrative powers. Cleansing, drainage, paving, water supply and lighting were brought under one authority. There was provision for the voluntary appointment of local medical officers of health who would submit reports on sanitary conditions.

The beginnings of the career of the General Board of Health were marked by the second visitation of cholera in 1848-49. The first epidemic had taken place in 1831-33 when some 31,000 deaths had occurred in certain parts of Great Britain and 21,000 in Ireland. The second epidemic in which 54,000 persons perished in England alone provided much occupation for the new Board and yielded to Dr. John Snow the important deduction that the disease was propagated by means of intestinal discharges carried in the water supply, a theory for which he found substantial confirmation in a third epidemic that occurred in 1853-54.

By the end of 1853 the Board had applied the Public Health Act to 182 places having an aggregate population of more than two millions. It also had framed by-laws regulating the health activities of local authorities and employed two types of inspectors—one medical—another engineering.[68] It had issued a valuable series of Instructional Minutes for the guidance of such authorities, besides the action it had taken with a view to the control of cholera. It had the boldness to propose a highly centralized system for the disposal of the dead. It grappled with the big question of the water supply of London and proposed that the private water companies should be superseded by a Public Authority.

These activities aroused antagonisms of local authorities, of vested interests and created a widespread distrust of the Board's medical and engineering theories.[69] The attacks—and these were centered upon Edwin

[68] This will be seen as the application to the public health movement of the principle adopted by Chadwick in the Factory Act of 1833 in which the Central Government held a check upon local authorities by means of inspection and reporting.

[69] Lord Shaftesbury in his diary wrote: "Aug. 9, 1853. It is not wonderful, though sad, when we remember the interests that it has been our duty to approach and handle. We roused all the Dissenters by our Burial Bill, which after all, failed. The parliamentary agents are our sworn enemies, because we have reduced expenses, and consequently, their fees, within reasonable limits. The Civil engineers also, because we have selected able men, who have carried into effect new principles, and at a less salary. The College of Physicians, and all its dependencies, because of our independent action and singular success in dealing with the cholera, when we maintained and proved that many a Poor Law medical officer knew more than all the flash and fashionable doctors of London.

Chadwick—came to a head in 1854 and a heated debate in Parliament led to a refusal to renew the Act.[70] The Government at once introduced a new Bill making some amendments in the Public Health Act of 1848 and continuing it subject to annual renewal, and reconstituting the General Board of Health as an authority consisting of certain ministers with a paid President, who, in fact, was himself the Board.

The first President of the Board was Sir Benjamin Hall. He came into the public health movement an avowed opponent of the Board's centralizing tendencies. Having to cope with the third cholera epidemic which was raging at the time, he formed a temporary medical Council which guided him with its advice. In 1855 he added to the Public Health Act, as then renewed, a clause empowering the Board to nominate a Medical Council from time to time as well as to appoint a salaried Medical Officer.[71]

Throughout this period from 1849 to 1859 the Health of Towns Association seems to have disappeared. There is apparently no record of a meeting after May 17, 1849. The *Journal of Public Health* ceased

All the Boards of Guardians: for we exposed their selfishness, their cruelty, their reluctance to meet and relieve the suffering poor, in the days of the epidemic. The Treasury besides (for the subalterns there hated Chadwick; it was an ancient grudge, and paid when occasion served). Then come the water companies, whom we laid bare, and devised a method of supply, which altogether superseded them. The Commissioners of Sewers, for our plans and principles were the reverse of theirs; they hated us with a perfect hatred." See: Hodder, Edwin, *The Life and Work of the Seventh Earl of Shaftesbury*, Cassell and Co., London, Popular Edition, 1893, p. 479.

[70] The *London Times* greeted the fall of the Board in a lively article. "Esculapius and Chiron, in the form of Mr. Chadwick and Dr. Southwood Smith, have been deposed, and we prefer to take our chances of Cholera and the rest, than to be bullied into health." Hammond, J. L., and Barbara, *op. cit.*, p. 167.

[71] The first salaried full-time Medical Officer of Health in the English public health movement was employed by the City of Liverpool on January 1, 1847. He was William Henry Duncan, M. D. (1805-1863). On January 1, 1847 he was appointed at a salary of £300 per annum with the right to private practice, and on January 11, 1848 the conditions of employment were changed when his salary was increased to £750 per annum with the understanding that he was to give up all private practice and to devote the whole of his time and attention to his duties. See: Frazer, W. M., *Duncan of Liverpool*, Hamish Hamilton Medical Books, London, 1947, pp. 45-46.

In 1848 the City of London appointed John Simon, M. D. (1816-1904) who later in 1855 was appointed as Medical Officer of Health to the General Board of Health by Sir Benjamin Hall.

The subsequent developments were as follows: In 1857 the duties of the paid President were transferred to the Vice President of the Education Committee of the Privy Council. In 1858 these duties were divided between the Privy Council and the Home Office. In 1871 the Local Government Board was set up to take over these, among other duties. In 1872 and in 1875 Acts were passed to establish local authorities for health in town and country.

publication with the October 1849 issue. The presumption is that the Association believed its work completed [72] with the passage of the Public Health Act of 1848. Furthermore, many of the active members of the Association became officially connected with the work of the General Board of Health.[73] In the light of the subsequent developments it is natural to speculate as to what turn events might have taken had the Association maintained the same militant propaganda it carried on in 1847 and 1848.

Conclusion

The brief but effective career of the Health of Towns Association and its provincial branches began a process of health education that eventuated in legislative enactments and administrative programs which has continued to expand down to our own time. The pattern of operation it adopted has its counterpart in the present-day "voluntary health organization" in Great Britain and the "unofficial health organization" in the United States. This pattern consisted of a central organization with branches established throughout the entire country. Its finances came from voluntary contributions and donations. The program was an attempt to educate the entire country with respect to the heavy toll of unnecessary illness and premature death caused by insanitary environmental conditions as revealed in a long series of official Governmental inquiries.

This educational process was carried out in a formal journal, widespread use of the press, the conduct of public meetings, the publication of leaflets and pamphlets, the establishment of exhibits, the employment of lecturers and appeals to members of Parliament, the intelligentsia, the clergy, the medical profession, the engineering profession, and the working-classes to support the program of the Association.

It attracted to its efforts a degree of influential leadership which was not to be denied when the actual crisis was reached. It recognized the need for paid full-time administrative service in the conduct of its business.

[72] It is suggested by Dr. Mackintosh that it is also possible that the situation confronting the Association was similar to the present day situation in England in regard to the National Health Service Act of 1946, i. e. all agreed on the value and importance of the principles behind the Act but opinion divided on the Act itself. He suspects that the Association split up and vanished after some of its members found themselves at variance with the methods adopted by the General Board of Health. Personal communication, 1 April, 1948.

[73] Southwood Smith, John Simon, John Sutherland, Henry Austin, R. D. Grainger, Hector Gavin.

A critical examination of the Association reveals several difficulties with which it had to contend. Its program was a diffuse one owing to the state of knowledge about the causative factors of disease existent at the time. Its proposed remedies went counter to the prevailing beliefs and customs of the country. Its financial methods were weak, irregular and insufficient. It disbanded its forces too soon after the achievement of its goal.

In whatever manner one views the Health of Towns Association, the conviction remains that it blazed a new trail in the public health movement, particularly in Great Britain, and subsequently in the United States.

The modern voluntary or unofficial public health organization [74] follows an almost identical pattern of community health education developed by the Health of Towns Association.

APPENDIX I

Health of Towns Association

OBJECTS AND RULES:

This Association has been formed for the following objects:

I. To diffuse among the People the valuable information elicited by recent inquiries, and the advancement of Science, as to the physical and moral evils that result from the present defective Sewerage, Drainage, supply of Water, Air, Light and Construction of Dwelling-houses.

II. To correct misconception as to the expense of the requisite measures, and to remove groundless apprehension as to interference with existing pecuniary interests.

III. To devise and to endeavor to obtain some better means than at present exist, for the investigation of the causes of mortality in any locality, and for the more effectual protection of the Public by the prompt removal of those noxious causes which are proved to be unfavorable.

IV. To facilitate Legislative enactments and their application, by the diffusion of sanitary information bearing on the several points. And,—

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[74] For example in Great Britain the National Association for the Prevention of Tuberculosis has been engaged for fifty years, since 1898, in combating tuberculosis on an educational basis.

In the United States the National Tuberculosis Association has been at work forty-four years, i. e. since 1904. These associations have a single purpose based upon definite causative knowledge which makes their preventive work more effective. They have solved the financial problem by use of the widespread democratic "Christmas Seal." And regardless of the programs of the Governmental agencies, these associations have remained at their task making from time to time the necessary adjustments in their own programs.

V. To encourage the establishment of Branch or Auxiliary Associations, not merely with a view to the local benefit that must thence arise, but also as the means of obtaining a larger amount of funds, and a more extended field of usefulness.

Rules

I. That all persons subscribing One Pound and upwards per annum, or presenting a Subscription or Donation of Five Pounds and upwards, shall be members of this Association; and that all members of Branch Associations, subscribing to such Branches the same amount, shall likewise be deemed members of this Association.

II. That a General Meeting of the Members shall be held every year, in the month of February, to elect a General Committee, and to receive an Annual Report of Proceedings, together with a statement of the Funds of the Association.

III. That the Committee shall have power to add to their number, and to appoint, as Honorary members, any persons who shall have rendered important services to the Association.

IV. That the Committee shall proceed, at its first Meeting every year, to the election of the following Officers:—A Chairman, Treasurer, and two Auditors, a Banker, Secretary, and a Collector; also a Sub-Committee of twelve exclusive of the Chairman, Treasurer, and Secretary, who shall be *ex-officio* members of both Committees.

V. That a majority of members present shall at every Meeting determine all elections and votes, and in the usual manner, by show of hands, unless a Ballot be demanded by Two or more Members present.

VI. That Special Meetings may be called on the requisition of Ten Members of the Association, addressed to the Secretary, stating the object.

VII. That all Balances exceeding Ten Pounds shall be placed in the hands of the Banker of the Association.

VIII. That for all sums paid a Resolution of the Sub-Committee shall be required, and that all drafts drawn on the Banker shall be signed by Two Members of the Sub-Committee, and countersigned by the Secretary.

The Committee trusts that the Branch Associations will remit to the parent Institution all surplus funds which may be at their disposal, with the view of carrying out as fully as possible the objects of the Association.

APPENDIX II

Table 1

Financial Report, 1845-1846 *

DEBIT	L.	S.	D.	CREDIT	L.	S.	D.
To Cash:				By Cash:			
Printing & advertising, etc.	54	3	6	Donations	194	4	0
Health of Towns Advocate	32	0	0	Subscriptions	61	1	6
Agent's salary	18	0	0	Discount on bills	0	2	0
Remitted to London for Pamphlets	5	11	0	Bank interest	2	0	2
Expenses incurred at Public Meetings, Lectures, etc.	12	4	6				
Rent of Offices, Fenwick St.	5	15	1				
Cash for apparatus	6	7	2				
Cash Balance Feb. 25, 1846	115	16	5				
	257	7	8		257	7	8

Liverpool, Feb. 26, 1846

Table 2

Financial Statement, 1846-1847

DEBIT	L.	S.	D.	CREDIT	L.	S.	D.
To Cash:				By Cash:			
Meetings, Committee, etc.	2	18	3	Feb. 25, 1846 to balance account rendered	115	16	5
Printing & advertising, etc.	36	9	9	Donations	72	16	0
Salary of J. Travis	56	0	0	Subscriptions	72	2	0
Health of Towns Advocate	81	7	0	Discount on bills	0	5	0
Rent & Taxes	34	3	9½	Bank interest	2	19	4
Remittance to Health of Towns Assn., London	5	0	6				
Painting, Diagrams, etc.	1	7	6				
Cash Balance Feb. 22, 1847	39	6	8½				
	263	18	9		263	18	9

* The *Liverpool Health of Towns' Advocate*, April 1, 1846, No. 8, p. 76

APPENDIX III

Publications of the Association, which may be had of Mr. Renshaw, Bookseller and Publisher, at the Depot of the Association 356 Strand.

I. Publications of the Association.

1. Abstract of the Proceedings of the Public Meeting held at Exeter Hall, Dec. 11, 1844. Price 2d.
2. Speech of the Marquis of Normanby in the House of Lords on Friday the 21st of July 1844. Price 2d.
3. Suggestions for Forming Branch Associations. Robert A. Slaney, Esq. Price 2d.
4. Unhealthiness of Towns . . . . R. D. Grainger, Esq. Price 4d.
5. Unhealthiness of Towns . . . in Crosby Hall. William Augustus Guy, M. P. Price 4d.
6. Unhealthiness of Towns . . . . 10th Dec. 1845 in Mechanics Institute at Plymouth. Viscount Ebrington. Price 4d.
7. On the Health of Towns . . . , lecture at Russell Institution May 5, 1846. William A. Guy.
8. Report of the Committee to the members of the Assn. on Lord Lincoln's Sewerage, Drainage, etc. of Towns Bill. 1s. 6d.
9. Address to the Inhabitants of the Metropolis on the necessity of a Sound and Comprehensive Measure of Sanitary Reform. Price ½d.
10. Sanitary State of the Metropolis. 1d.
11. Weekly sheet of Facts and Figures. ½d.
12. An Address to the Working Classes of the United Kingdom. Dr. Southwood Smith (extracted from Howitts' Journal.) Price ½d.
13. Analysis of Evidence laid before the H. of T. Com. and the Select Com. of the H. of T. on Metropolitan Sewage Measure.

Publications of the Branch Associations

1. The Liverpool Health of Towns Advocate in Mo. Numbers, Price 1d.
2. The Plymouth Health of Towns Advocate in Mo. Numbers, Price 1d.
3. Why are Towns Unhealthy? Published by the Manchester Health of Towns Association. 1d.

Cheap Publications by Members of the Association

1. Lectures on the Unhealthy Condition of the Lower Class of Dwellings, especially in Large Towns. By the Rev. Charles Girdlestone, A. M., Rector of Alderly Cheshire. Price 1s, 1d.
2. Report of Henry Austin, Esq., C. E. on the Sanitary Condition of the City of Worcester, with a appendix by Edwin Chadwick, Esq. Price 6d.
3. An Address to the Inhabitants of St. James's Westminister on certain local circumstances affecting the Health of Rich and Poor. By a Retired Churchwarden. Price 6d.

Report of the Com. to the members of the Association on Lord Lincoln's Sewerage, Drainage, etc. of Towns' Bill. London: Charles Knight & Co., 22, Ludgate Street. 1846. p. 122. 170 sections of approval, disapproval and additions.

APPENDIX IV

Form of Petition *

The humble Petition of the undersigned, &c.

HUMBLY SHEWETH,

That your petitioners have long felt and deeply deplored the defective sanitary conditions of populous towns and districts, resulting in wide-spread disease, heavy pecuniary loss, and serious demoralization, affecting all classes, but especially the poorest.

That such evils, always prevailing and arising from preventible causes, have been proved by successive government commissions and recent local investigations, to exist in every part of the empire; have been greatly augmented during the past and current years; and may be still further increased by the visitation of the cholera, rendering sanitary legislation a matter of the most urgent necessity.

That your petitioners have heard with great satisfaction that it is the intention of Her Majesty's Government to introduce a remedial measure, at an early period after the recess.

Your petitioners therefore entreat your Honorable House to pass an efficient and comprehensive Health-of-Towns Bill.

And your petitioners will ever pray.

This Form of Petition has been adopted By the Sub-Committee of the Health-of-Towns Association, and is recommended to the Branch Associations, and to all persons and bodies interested in sanitary reform.

Lord Morpeth having announced his intention of introducing a bill to the consideration of Parliament, on the 10th of February, it is desirable that as many petitions as possible should be in the hands of Members on or before that date.

It is also recommended that the individual Members be addressed, urging their attendance and support of the measure.

The Petition to the House of Lords should be addressed, "To the Right Honourable the Lords Spiritual and Temporal of the United Kingdom of Great Britain and Ireland, in Parliament assembled." That the House of Commons should be addressed, "To the Honourable the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled."

N. B.—One signature at least must be attached to sheet on which the Petition is written.

Petitions may be sent by single individuals interested in sanitary reform, and as many such as possible ought to be prepared. Workmen in particular shops and manufactories ought also to be induced to petition in a body. The members of professions in particular localities, as the medical, clerical, and legal, ought to act together; in addition to vestries, parochial boards, and other public bodies. It is time that the sanitary question was settled on a sound basis; and we hope the movement will be universal.

* *Journal of Public Health and Monthly Record of Sanitary Improvement*, vol. 1, p. 108.

JOHN LYDGATE: A MIRROR OF MEDIEVAL MEDICINE

CHARLES F. MULLETT

Not the least striking feature of medieval literature to the modern reader is its pervasive comprehensiveness. A medieval manuscript sometimes incorporated dozens of separate items which may have been connected by chance or deliberate intent, to the utter bewilderment of later students. Such a confusing tissue probably resulted from circumstance—a copying of whatever was available, an accident of arrangement, the interpolation of a fancied bit of originality. On the other hand it often served a definite purpose, particularly the interest of the compiler who unfortunately cannot now be cross-examined. Perhaps also it reflected a habit of thought, foreign to our own itemized cataloging. Such a supposition derives nourishment from printed works, for not infrequently the poetry of the time, though long exposed to critical winnowing and ordering, expresses the same large sum and wide range of topics.

The verses of John Gower (1325?-1408) and of John Lydgate (1370?-1451?) are cases in point. Although the first has already been examined in such detail as to preclude any necessity for equal attention here to the latter [1]—for the intellectual outlook of the two men is roughly identical—Lydgate, the "churlish monk of Bury," warrants a brief examination on his own. This "voluminous, prosaic and drivelling" poet wrote an enormous number of lines which at once exhibit the disorderly extensiveness of medieval learning and his own particular quality. He was acquainted with contemporary and classic authors, the latter more than the former, but neither depth nor accuracy marked his observations. He knew no Greek or Italian, and Latin and French only tolerably well; and he derived his ancient learning from Vincent of Beauvais. Many of his writings, long and short alike, were mosaics, their titles often no adequate clue to the content.

Students of literature assess him as a transition figure between Chaucer and the later flowering, without the genius of either. His writings in their volume, diversity, and ubiquity are likewise a fifteenth-century *Summa*, a clue to the culture on the European frontier. Men talk easily—

[1] George G. Fox, *The Medieval Sciences in the Works of John Gower* (Princeton University Press, 1931). A brief summary of Gower's position, largely based on this work, appears below.

too easily—about the unity of medieval civilization. Yet neither the quality nor the form is everywhere the same. Ruggedness and exuberance, however estimable, are not the same as order and logic and taste, however infertile. The former deserve study more for their promise than for their achievement, but they cannot replace the latter. To analyse the expression of different areas is to appreciate that a precise quality of mind, sensitivity of perception, and intellectual environment are not universally possessed.

John Lydgate wrote at a poor time. Throughout Europe language and ideas stood on shifting sands; and in England one social order and political structure was decaying while another struggled for delivery. To credit him either with scientific originality or with skillful popularization of other men's ideas would be unsound, but to view certain scientific commonplaces in a monkish mirror is to learn what the educated thought and what they passed on to the literate and semi-literate.

After an unruly boyhood, marked by japery and fruit-stealing, Lydgate went through a conventional educational routine, presumably including St. Edmunds school, Oxford, and the Continent. An early aptitude as well as fondness for poetry brought commissions from London corporations to write appropriately complimentary verses bursting with classical lore and mythological allusion.[2] From this he became a court poet, apprentice, so to speak, under Henry IV, a master under Henry VI.[3] Thereupon he got lands and pensions and proceeded henceforth to write reams.

Most of what pertains to science appears in his "minor poems," and nowhere did he expound his ideas very systematically. Medicine gets far more references and probably more space than any other science. This need scarcely be wondered. With many contemporaries Lydgate reflected the constant burden of the pestilence by his concern with sudden death as well as with the disease itself. He composed prayers against it and one versified "doctrine." He translated *The Dance of Death*. Finally, in a variety of poems he discoursed upon good health, the proper bodily regimen, the frightful imminence of death, and miscellaneous scientific notions.

Nothing grand marks his verses. He was no poet of nature as Lucretius was, no landscape poet as Wordsworth was, no graphic artist as were some fellow countrymen in dealing with later plagues. Matter-

[2] *The Minor Poems of John Lydgate* (2 vols., ed. by Henry Noble MacCracken, Early English Text Society, extra series, vol. 107, original series, vol. 192, London, 1911, 1934), II, 695, 698: "A Mumming for the Mercers of London" and "A Mumming for the Goldsmiths of London."

[3] *Ibid.*, II, 600 ff. "The Title and Pedigree of Henry VI" and the "Ballade to King Henry VI on his Coronation" are examples.

of-fact as he was in interpreting man's place in nature, it is precisely this quality that renders him useful to the historian of science. With Lydgate —not forgetting the passage of five hundred years—one is sure of his footing. No rhetoric, no fantasy will cloud the sight. He moved readily from problems, that in greater poets' hands would have been sublime, to trivia, and from trivia back to the potentially grand. He composed "A Treatise for Laundries" in which he prescribed milk for wine spots, "lye of beenes" for grease spots, wine for ink, and, for all the rest, water.[4] He described "The Nine Properties of Wine," a liquor that cheers, clears the sight, gladdens the heart, heats the stomach, sharpens the wit, gives courage, cleanses wounds, scours the palate, and makes men light at feasts.[5] He contrived a "pageant of knowledge."[6]

This last contains a good deal of medical science in one way or another. After linking Jubal with song, Saturn with tillage, Ceres with sowing, Mars with war, Pallas with armor, Tubal with steel, Minerva with weaving, and Deborah with linen he came to Apollo and medicine.

> Phoebus found first craft of medicine,
> By touch of pounce, vein, and inspections.
> Esculapius taught the doctrine
> To know the qualities of the four complexions,
> Of electuaries, drugs and potions,
> And among all there is nothing more meet
> To health of man than temperate diet.

With many later as well as earlier writers he correlated astrology and health. Each planet stirred man to some purpose, and each zodiacal sign governed a part of the body.

> Cancer hath the breast in his domain
> Of the heart lordship hath the Lion
> Virgo the governance hath of twain,
> Of navel and womb, and Libra lower down
> The members of man governeth the Scorpion,
> By this reason the philosophers saying
> Is that man cannot be steadfast in living.

The fickleness of man likewise derived from the four elements. Earth

[4] *Ibid.*, II, 723.
[5] *Ibid.*, II, 724.
[6] *Ibid.*, II, 725. On the advice of my friends in the English Department, who frankly admit that no man may be sure of Lydgate's spelling or pronunciation anyway, and in the interest of greater intelligibility, I have, wherever desirable, put his words in modern dress.

gave him sloth, water instability, fire rage, and air sweetness. His complexion determined his personality. The sanguine man was brave, loving, and extravagant; the phlegmatic man was slow, dull, pale, and "rude of eloquence"; the choleric man was subtle, lean, and "citron in his colour," as well as irritable, envious, dry, and dissipated; and the melancholy man was malicious, rash, and a forger of discord.

The seasons influenced man not less than his temperament. Summer made for heat and dryness, autumn brought dangerous diseases as Galen had long since pointed out, winter closed the pores, and spring rekindled man's desires by mingling heat and moisture. Accenting man's instability was the weather which varied with the months. Moreover, fortune was fickle; age followed youth. How then could man be steadfast in living? Heaven alone was stable; therefore he should seek it.

Much of this crept into Lydgate's other writings.[7] Nature was the queen of creation, the ruler of the earth, planets, stars, firmament, and the nine concentric spheres. She wore the mantle of the four elements which she also governed. Though fate and hell sought to destroy her work, she constantly repaired it. Man, the creature of fickle fortune, had two virtues—sensitivity and understanding; and he must ever remember that measure was treasure.

Apart from "A Pageant of Knowledge" the most fruitful source of Lydgate's ideas was the *Secrees of Old Philosoffres* (*Secreta Secretorum*), an eighth-century compilation in Syriac, later translated into Arabic with a prologue recommending Aristotle, Latinized in the thirteenth century, then Frenched, and finally Englished by Lydgate and Benedict Burgh.[8] Lydgate rendered the first 213 stanzas, Burgh, who much admired him, the next 177. The two parts form an intellectual unit.

The prologue listed Aristotle's secrets as astrology, magic, alchemy, and geometry, besides some he never disclosed; he knew the four elements and would cure illness by the philosopher's stone. The following lines stressed the obligation of a king to promote learning, the need for his leech to know astronomy and the times for sleeping and waking. Astronomy aided the diagnosis of fevers, aches, and gouts, and the best doctors had experience of it. The rules for good health required balanced humors and moderation all along the line: temperance in food, drink, and sleep, and

[7] *Reason and Sensuality* (2 vols., ed. by Ernst Sieper, E. E. T. S., ext. ser., vols. 84, 89, 1901, 1903), I, ll. 181-472; *Minor Poems*, II, 772, 776: "A Song of Just Measure," and "Measure is Treasure."

[8] *Secreta Secretorum* (E. E. T. S., ext. ser., vol. 66, London, 1894).

avoidance of extremes in weather. To resist the pestilence, men should fly wicked airs, avoid infected places, drink good wine and eat wholesome meats, walk in clean air, and eschew black mists. They must remember always that the autumn endangered sick people and nourished fevers and pestilence especially.

Burgh in taking up the theme protested his ignorance of the sciences, but this did not prevent his giving advice on health. With Lydgate he opposed excess—too much sleep, bleeding, old wine, and salt meats. Sulphur baths and exercise after meals were good. Man should always watch his diet and never take foods that corrupted too easily. After outlining the principal parts of the body and their functions, the head and its chambers of imagination and remembrance, the breast, the belly, and the genitals, he listed the antidotes to their ailments. Aloes cured diseases of the head; herbs, spices, and electuaries, diseases of the breast, among the signs of which were coated tongue; and purgation, the diseases of the belly. Concerning the genitalia he discussed the ills of the bladder rather than venereal disease.

He based his notions of good medicines on the experience of peoples and his own observations. He recalled that the Greeks recommended hot water three mornings running, that the Indians (Hindus) preferred milk, and that Aristotle plumped for sleep, a peaceful mind, and an opening diet. He likewise assessed the value of food and drink, both in general and particular. Fowl made good blood; perch was excellent fish. Food appropriate to laborers did not necessarily benefit others. Running water was a better drink than standing, but one should not drink water at meal times. One should drink cold in summer and warm in winter. Wine, of which hill grown was best, benefited older but not younger people. Red, thick wine made good blood, but should not be taken in excess; it was profitably compared to rhubarb. Man should always take good bread and meat and wine in moderation.

Man himself was a microcosm, in whom there were twenty-three animals. He was as hardy as a lion, buxom as a turtle, simple as a lamb, and malicious as a fox. One should never choose a pale man but always one who laughed heartily; the best was a "mean" man.

Lydgate's "Dietary, and a Doctrine for Pestilence" contains the same doctrines, at times indeed using the same words that appeared elsewhere.[9] The "Doctrine" bade men avoid wicked airs and infected places, delight

[9] *Minor Poems*, II, 702. The "Dietary" circulated widely and in different versions during the century.

in gardens, smell sweet things, and keep well clad, get lots of sleep but rise early, remain continent, and refrain from fruit but eat chickens and not spare vinegar or wholesome spices. Finally,

> Who will be whole and keep him from sickness
> And resist the stroke of pestilence,
> Let him be glad, and avoid all heaviness,
> Flee wicked airs, eschew the presence
> Of infected places, causing the violence;
> Drink good wine, and wholesome meats take,
> Smell sweet things and for his defense
> Walk in clean air, eschew mists black.

The " Dietary " gave similar advice. Keep the head warm and eat no raw or salt meats. Drink wholesome wine, eat light bread, and arise from the table hungry. Don't drink before sleep or sleep at noon. Sage and rue were good in drink. Avoid gluttony:

> A replete stomach causeth great damage,
> Groaning, grousing, walking at midnight.

Temperance in work, eating, and thought was the best diet. A glad heart was a good medicine. Be clean, keep warm, avoid dissipation, and take moderate exercise. Above and beyond bodily care, furthermore, the wise man would be cautious of tales, do no violence, avoid deceit, behave courteously, never swear falsely, hate duplicity, and live in rest and peace with his neighbor. Charity and prayers would complete the regimen.

The pestilence excited more varied attention from Lydgate than any other ailment. Indeed it alone received specific treatment, for, in addition to the attention already noted, it inspired his translation of *The Dance of Death*, the historical poem, " How the Plague was ceased in Rome," and several prayers.

The Dance of Death, of which a recurrent wave of the Black Death inspired the French original in the fourteenth century, was translated between 1426 and 1433, probably under the shadow of another visitation.[10] *Death* addresses the *astronomer*:

[10] *The Dance of Death* (E. E. T. S., orig. ser., vol. 181, London, 1931), VV. 36-37, 53-54, 81. The burden of the whole is that Death spares no one. He therefore warns Pope, Emperor, Cardinal, King, Patriarch, Constable, Archbishop, Baron, Lady of Great Estate, Bishop, Squire, Abbot, Abbess, Doctor of Both Laws, Baillie, Burgess, Dean, Merchant, Monk, Sergeant, Usurer, Amorous Squire and Gentlewoman, Man of Law, Juror, Minstrel, Laborer, Friar, Child, Clerk, and Hermit. A painting contemporary with Lydgate's translation decorated a shed in the churchyard of the Dominican convent at Basle. It portrayed Death greeting the same sort of persons as were addressed in the poem. See Raymond Crawfurd, *Plague and Pestilence in Literature and Art* (Oxford, 1914), plate XIII, facing p. 135.

Come forth master that look up so far
With instruments of astronomy
To take degrees and height of every star
What may avail all your astrology
Since of Adam all the geneology
Made first of god to walk upon the ground
Death dost arrest thus sayeth theology
And all shall die for an apple round.

To which the *astronomer* replies:

For all my craft cunning or science
I can find no provision
Nor in the stars search out no defense
By doomsaying nor calculation
Save finally in conclusion
For to describe our cunning somewhat
There is no more by sentence of reason
Who liveth aright must needs die well.

Death then turns to the *physician*:

Master of physic which on your urine
So look and gauge and stare against the sun
For all your craft and study of medicine
All the practice and science that ye can
Your life's course so far forth is run
Again my might your craft may not endure
For all the gold that you thereby have won
Good leech is he that can himself recover.

And the *physician* answers:

Full long agone that I unto physic
Set my wit and my diligence
In speculative and also in practice
To get a name through my excellence
To find out against pestilence
Preservatives to staunch it and to fine
But I dare say shortly in sentence
Against death is worth no medicine.

Finally the poem concludes:

Man is naught else plainly for to think
But as a wind which is transitory
Passing a forth whether he wake or wink
Toward this dance have this in memory

Remembering aye there is no better victory
In this life here than flee sin at last
Then shall you reign in paradise with glory
Happy is he that maketh in heaven his feast.

According to the historical "How the Plague was ceased in Rome" a cruel plague once laid waste to all Italy, no cure availed from Rome to Pavia. More died than survived and the good angels were not less pestiferous than the evil ones. After long suffering, a revelation declared that upon the erection of an altar to the patron of the plague-stricken, St. Sebastian, at Pavia, the plague would cease. The altar was thereupon erected and the promise was kept.[11]

So noble medicine nay so sovereign
So special strong against fever pestilent
Avicenna, Hippocrates, nor yet Galen
Serapion [12] neither for all his judgment
Nor Esculapius, for all his medicament
Could never make in all his life's space
Medicine like to the lord omnipotent
When to his peoples he lists to send his grace.

* * * * * *

Not gold potable, nor pure quintessence,
Not Rue barbarian, nor Alpharic Treacle,
Surmount the power of mighty pestilence,
But God [through] his saints doth his miracle
To every person, by grace receptacle
Worshipping this martyr, he instilleth his grace,
Most sovereign electuary, in all pestilence case.

In devotional vein, Lydgate directed his prayers mainly to the Blessed Mary but on one occasion he sought the aid of St. Petronilla, the daughter of St. Peter:[13]

[11] *Minor Poems*, I, 159. This no doubt refers to the great pestilence in 680. The story is found in Paul the Deacon (*De Gestis Langobardorum*, VI, 5) and is put in its proper setting by Crawfurd (*Plague and Pestilence*, 95-99) who also includes a vivid fresco (fifteenth century) and a fine picture (nineteenth century), relating to the whole episode. It is of some interest that Lydgate agrees with Paul—he may have got his story elsewhere—although the fresco puts the legend in a Roman rather than Pavian setting.

[12] Probably Serapion, the elder, a Christian physician of the second half of the ninth century at Damascus, whose works, translated into Latin by Gerard of Cremona, were very popular throughout the Middle Ages; his chief contributions were in the realm of antidotes and venesection. George Sarton, *An Introduction to the History of Science* (Baltimore, 1927), I, 608.

[13] *Minor Poems*, I, 159. As everyone knows, the artists of fifteenth-century Italy

Succor thy servants where they sleep or wake
O blessed Pernell! Now for thy father's sake
Against all excesses and stroke of pestilence,
All that devoutly their prayer to thee make
Send them good health with virtuous patience.

His appeals to Mary were numerous; sometimes the plague was the whole theme, sometimes but a part. In one of the latter he hailed the Virgin:

O Sapphire leap all swelling to repress,
Off cankered sores and venemous felon,
In ghostly wounds be their governess
To thy five Joys that have devotion.[14]

In another:

Hail! very Mater misericorde,
And peerless Princess of excellence
Of angels aloft pray Sol justice,
Thy sweet son of most magnificence,
That no perilous plague of pestilence,
Since thou art laus Apostolorum
Enter in England, thy dower with reverence,
Ave regina celorum.[15]

At least three poems prayed the Virgin's aid against the plague, pleas that at once sought assistance purely spiritual and assistance in the removal of mundane evils and causes of pestilence. First in this category is "O Heavenly Star, Most Comfortable of Light:" [16]

O Heavenly star, most Comfortable of light,
Which, with thy ghostly gracious Influence,
Hast Clarified and put unto flight
All musty weathers parlous for pestilence,

* * * * * *

O glorious star, do not now disdain
Contrary planets to appease and Repress.
Whose dreadful ways do men full Mortal pain,
By unwholesome airs causing great sickness,

* * * * * *

---

constantly found the plague a source of inspiration; some of the most remarkable creations paid homage to St. Sebastian and the Blessed Virgin as intercessors. Crawfurd (*Plague and Pestilence*, Ch. X) reproduces several fine examples.

[14] *Ibid.*, I, 285.

[15] *Ibid.*, I, 291.

[16] *Religious Lyrics of the XVth Century* (ed. by Carleton Brown, Oxford, 1939), 206.

Help, noble Princess of pity and of grace
By pestilence air that we be not lost

* * * * * *

Wife and Maid, mother of Christ Jesu,
This dirge made In thy Reverence
Receive with favor, and by thy Great virtue
Preserve thy people from ghostly pestilence,
And from Infection of worldly violence,
Amen.

Two others bearing the same title, "Stella Celi Extirpavit," are scarcely less noble as poetic devotion and even more revealing as medicine.[17] The first begins:

Thou heavenly queen, of grace our lodestar,
With thy Chaste milk plenteous of pleasance
Gave Jesu suck, puttest Away the war
Of Pestilence to Appease our grievance

* * * * * *

Celestial star, of beauty most sovereign
To thee we pray, on us cast down thy sight
Only of Mercy, that thou not disdain
Of Infect airs the Mists to Restrain
That by thy Gracious most wholesome Influence
We have no Cause on hasty death to complain
Which slayeth the people by sword of pestilence.

It then goes on to express complete trust in Mary against all airs causing infection:

For as Phoebus chaseth Mists Black
Toward Midmorrow with his beams Clear
Lucifer biddeth sluggish folk Awake
In the Orient, first when he doth Appear.
Right so mayest thou, In thy Celestial sphere,
O star, of stars most of excellence,
Maid and mother, bemean of thy prayer,
Save all thy servants from stroke of pestilence.

Jesus too for his mother's sake who, "against all Infection . . . is our chief defense," was besought to save his servants from the pestilence.

In the second poem of the same title, Lydgate hailed the "blessed queen:"

[17] *Minor Poems*, I, 294.

From all mischief, be thou our chief defense,
In our most trouble thy succor let be near
And be our shield from stroke of pestilence

* * * * * *

Thou broughtest life, to me and all mankind,
And puttest away eternal pestilence.

* * * * * *

On us sinners thy mercy let down shine,
Of infect airs oppress all their utterance,
Us to infect that they have no puissance;
From their battle be thou our chief defense,
That their malice to us do no grievance,
Of infecting or stroke of pestilence.

He concluded with a plea for life not meddled with sickness so that the soul might come to bliss where there was no dread of pestilence.

This theme ran through many of his verses: "Timor Mortis Conturbat Me." Life is short, "a thoroughfare of woe;" no man knows his hour. Man must learn to die and remember who will save him. "That now is hay some time was grass." Roses fade; the nightingale sings no more; age withers all; beauty departs; dice never fall twice alike. Put no trust in this variable world, only in God.[18]

Lydgate had none of that lightness which characterized his younger Scottish contemporary, Robert Henryson (1430?-1506?), who also composed a prayer for the pestilence and touched upon it in other connections.[19] Henryson achieved at once far greater exaltation—O Eternal God of power infinite—and far more humor. In "Some Practices of Medicine" he informed a practitioner that he, Henryson, knew more about medicine than the doctor. In proof he recited prescriptions for colic, insomnia, belching, hiccuping, and heartburn. Among his ingredients were sundry herbs, the hair of a hedgehog, a sow's kiss, a louse's leg, five ounces of flea's wing, three spoonfuls of black spice, dung, dirt, and mustard, the ballocks of an ox, three crows of a cock, and the shadow of a yule log. He wound up by urging the doctor to administer these remedies to a patient who, it was guaranteed, would then either bless or damn him. He warned, however, the herbs and grasses must be picked at a propitious hour, and delivered his cryptic parting shot: "tis a cloudy mirror, another man's arse."

[18] *Ibid.*, II, 655, 809, 828, 844.
[19] *The Poems of Robert Henryson* (Edinburgh, 1908), III, 162, 134, 150.

Less humorous, less intelligent, and less exalted than Henryson, Lydgate was less systematic than his older contemporary, the more gifted Gower. Where Gower used science to adorn his poetry Lydgate dragged in anything that crossed his brimming and disorderly mind. Where part of Gower's *Confessio Amantis* is a rimed encyclopaedia of astrology, alchemy, cosmology, and physiology, Lydgate exploited the same elements in a totally hit-and-miss fashion. Neither, it is true, had any conception of knowledge for its own sake: knowledge must exalt God; but where Gower subordinated nature's law to God's, Lydgate made nature the queen of creation though undoubtedly under God. Both stressed the necessity of keeping in tune with nature. Gower, however, made much more of the doctrine that the connecting link between man and the world was the essential identity of their elemental composition.

Through his "optic glass" Gower viewed man the microcosm rather elaborately and correlated in time-honored manner the elements, the humors, the ages, the seasons, and the complexions. Here also, though without the wit of Henryson, he sharply attacked physicians and apothecaries, their tricks and frauds, their worthless drugs. Especially did he belabor their unholy alliance by which the patient was at once mulcted of his money and delayed in his cure. Throughout this section Thorndike's dictum, "The less medicine, the less superstition," receives ample foot-noting.

Lydgate though everywhere alive to scientific phenomena gave more attention to men's relation to their fellows. Especially could one hold up the mirror to his political and social outlook. In addition to various political poems, historical agglomerations, and the conventional potpourri of courtly love, which comprise the theme of long and short poems alike, he has something to say of proper behavior. Here he ranged all the way from an enunciation of moral verities and social ethics to the doctrine of courtesy.[20] If he is often dull he has value as the reflection of the whole man of his day, and men of later generations found him an admirable source of conduct and belief, perhaps even of information.[21] But there can be no denying that he is tedious. His loose narratives, seldom if ever spiced with piquant phrase or seasoned with suggestive idea, invariably

[20] In "Stans Puer ad Mensam" (*Minor Poems*, II, 739) he admonishes youths to sit still, be modest not clownish, refrain from scratching and picking the nose, and to pare nails and keep clean. At table they should not crumble their bread, dirty the napery, break wind, or pick their teeth with the knife.

[21] Charlotte D'Evelyn, *Peter Idle's Instructions to his Son* (Boston, 1935). Peter Idle died in 1474.

have the wearying character of an *omnium gatherum* in which, as one dips, the only guarantee of surprise is Lydgate's answer to " what next." It may be anything. Because, however, that is probable, Lydgate stands as a fifteenth-century *Summa*, at once an introduction to the *Weltanschauung* of his time and a museum of its intellectual antiquities.[22]

[22] The Lydgate canon is extraordinarily impressive as to bulk. In addition to the works already cited the Early English Text Society has published *The Assembly of Gods: or, The Accord of Reason and Sensuality in the fear of death* (ext. ser., vol. 69, 1896); *The Fall of Princes* (ext. ser., vols. 121-124, 1924-1927); *The Siege of Thebes* (ext. ser., vols. 108, 125, 1911, 1930); *Temple of Glass* (ext. ser., vol. 60, 1891); *Troy Book* (ext. ser., vols. 97, 103, 106, 126, 1906-1935); *Pilgrimage of the Life of Man* (ext. ser., vols. 77, 83, 92, 899-1904); *Lay Folks Mass Book* (orig. ser., vol. 71, 1879). The *Siege of Harfleur* is in *The English Garner* (ed. Edward Arber, Westminster, 1896), VIII, 13-24. Some of these are original, others are translations, but all of course reflect John Lydgate. Well edited and " introduced " by learned scholars, any or all of them contain asides pertinent to the subject treated in the preceding pages.

A MEDICAL SOLDIER OF FORTUNE

HARRY FRIEDENWALD

The early history of ophthalmology in Baltimore was meteoric. Dr. George Frick, a Baltimorean, had graduated in medicine at the University of Pennsylvania in 1815, had spent several years in further studies in Europe, and had returned to Baltimore in 1819 to engage in the practice of ophthalmology. In 1822 he delivered clinical lectures at the Maryland Hospital, and he established the first "Eye Dispensary" here. In 1823 the University of Maryland built its Infirmary; one of its four wards was reserved for those suffering with eye ailments. In the same year Frick published his *Treatise of Diseases of the Eye*. Two years later this work was placed on the list of those which the student was required to read when applying to become a licentiate in Maryland. Dr. Frick ceased practising about 1835, due, it is believed, to his increasing deafness.

For almost thirty years Baltimore was then without an ophthalmologist. The next to appear was Dr. Aaron Friedenwald, who had been an office student of Professor Nathan R. Smith, "The Emperor," had graduated at the University of Maryland in 1860, and who returned in 1862 from two years of study in Europe under von Graefe in Berlin and Arlt in Vienna.

In searching the Library of the Medical and Chirurgical Faculty of Maryland for vestiges of early local history, I was surprised to find two little books, *A Guide to the Diseases of the Eye*, published in Baltimore in 1856, and a second, *Eye, Ear, Throat Diseases, Bronchitis, Catarrh, Asthma, A Book for the People*; published in Philadelphia in 1865. The author of both was Dr. F. A. von Moschzisker. Nothing further was learnt about the author in Baltimore, except that his name is found in the City Directories for the years 1853 to 1856 inclusive. He was not a member of the Medical and Chirurgical Faculty. But the Catalogue of the Library of the Surgeon General's Office revealed a list, more imposing in titles than in substance. The author introduced himself as "Oculist and Aurist." The following bibliographic list is arranged in chronological order together with notes.

Spectacles, Why and When to Use Them; or, near and far sightedness; the use and abuse of glasses. Baltimore 1856.

The following dedication and preface and other citations are interesting and characteristic:

To Professor John C. S. Monkur, M. D.

My dear Doctor:

To you, who has evinced the greatest kindness towards me from the day I had the honor of your acquaintance, and who has watched with pleasure and interest the result and success of several difficult cases you recommended to my treatment, and assisted me in a surgical operation on the Eye, I beg, by your permission, to inscribe this little book as a testimony of respect for your talents, and token of gratitude from

Your friend and obedient servant,

F. A. von Moschzisker.

PREFACE

"I never read Prefaces, why should I write them," once wrote a wise man. It was my wish to say the same, yet some remarks are necessary, and those are: I have inserted nothing in these pages but what wise men have stated. I acted on the principle, We ought not, like the spider, to spin a flimsy web wholly from our own materials, but, like the industrious bee, visit every store and cull the most useful and the best.

Every advice, I may say, which these pages contain, is supported by the authority of the most scientific and standing works on the subject.

The Eye, though diminutive in point of size to every other part of the body, is nevertheless the most important, the most attractive, and most inimitably beautiful. Therefore, reader, judge not this little book by its size.

I wrote it to be read, and in a very short space of time; and I promise each reader his share of benefit and instruction when diligently perused."

But if he be so blind not to see the good, I have only to say the sooner he used the wise man's spectacles, or seeks the advice of a good Teacher or an Oculist, the better for him. Dr. F. A. von Moschzisker, Oculist and Aurist, 34 Hanover Street.

Every Spectacle of Dr. von Moschzisker is warranted to be correct in all its optical points and setting.

[He tells us:] The separation of the ophthalmic department from the rest of the surgical practice has existed long before we had dentists. Let all those who value their sight early seek the advice of a professional Oculist.

Dr. von Moschzisker, Oculist and Aurist, has, during the last four years of his residence in this city, most successfully treated almost every disease to which the eye is subjected, and some in their very worst stage. Dr. M. gives his exclusive attention to the Medical and Surgical treatment of all Diseases of the Eye & Ear. Artificial Eyes inserted.

Office, 34 Hanover Street. The self-supporting Sound-Conveyer for sale.

One note is of interest,—that he has been in practise here for four years which would give 1852 as the year of his arrival.

A Guide to the Diseases of the Eye and their Treatment. For the use of students and young practitioners. 174 pp. Baltimore 1856.

This book is dedicated to Prof. Robley Dunglison to whom he expresses his gratitude: "It is now some years since I had the honor of delivering a letter of introduction to you, and of being by you introduced to several of the world-renowned men who preside over the medical institutions in your city; and during my stay in Philadelphia I received many proofs of your hospitable feelings and readiness to advise a stranger in a strange land."

The modest preface is significant because it is directed to medical students and young practitioners: "The compiler of this work is as far from claiming for himself the title of author as he is from assuming peculiar merit for having brought before the profession anything new. Such is not his pretension; and yet, while he thus disclaims originality, he is not without hope that the intrinsic utility of the work now offered will win for him the thanks of the medical student and young practitioner. The book which bears the title of The Student's and Young Practitioner's Guide to Ophthalmic Diseases, is compiled from the best writers."

We may state definitely that this booklet falls far short of Dr. Frick's that had appeared here a third of a century earlier.

On the Use of the Artificial Membrana Tympani in Cases of Deafness Depending upon Perforation or Destruction of the Natural Organ. 40 pp. Philadelphia. 1857.

In this booklet we observe a more extensive effort at advertisement. A newspaper account of the Monkur operation referred to above (from the *Baltimore American*) is reprinted in full. And there are laudatory accounts taken from many Southern newspapers, to which we shall refer below.

The Ear, its Diseases and their Treatment. 13 + 319 pp. Philadelphia. 1864.

This book is dedicated to Dr. Oliver Wendell Holmes "in appreciation of his independence as a medical man and his genius as a poet."

Fifteen years of daily occupation in the treatment of aural complaints, furnished by an extensive practice, together with a careful study of the older and newer literature on this subject, and a sincere and earnest desire to learn from the experience of others as well as his own, entitles the opinion of the author, as he

believes, to the attention and consideration of the profession; and while he has, by no means, the pretension to set himself up as an oracle, he feels that he can, without presumption, present the results of his studies and experience with the words of the Roman poet:—

"Si quid novisti rectius istis,
Candidus imperti; si non, his utere mecum"

Eye, Ear & Throat Diseases, Bronchitis, Catarrh, Asthma, A Book for the People, 1027 Walnut Street, Philadelphia, 1865. 143 pp.

This book is avowedly "addressed to the public in general and to editors and physicians in particular" and is "dedicated to Dr. Edward I. Sears, editor of the National Quarterly Review in appreciation of his able efforts to expose and discredit medical quackery. . . ." Its very popular character is emphasized by a glossary at the end with definitions of such terms as auditory, hygienic, lachrymation, etc. Its purpose is made clear by an addition, the descriptions with elaborate illustrations of his "apparatus for the treatment of deafness, throat diseases, catarrh and asthma," together with an abundance of "Testimonials."

His books are in large parts made up of quotations from numerous medical writers; they are not always in quotation marks or assigned.

Having dealt with Moschzisker's works bearing on the branches of medicine in which he professed special knowledge and skill, and noted the number of laudatory commendations in letters and in advertisements in the public press we may now turn to two publications which follow in which Moschzisker gives expression to his general views on medical practise, views we shall find quite heterodox. In his early works he addresses "students and young practitioners" and appears to seek the support of the medical profession. His later writings give evidence of intense hostility to medical practitioners. These present the ethical aspects of medical practise as seen by Moschzisker.

Medical & Surgical Science in the United States, Specialties, Empiricism, etc., enlarged from an article published in the *New Orleans Picayune* of February 14, 1860. 28 pp. New Orleans 1860.

His preface can hardly be regarded as too modest.

Messrs. Editors:—I propose, with your permission, to offer, through the medium of your widely circulating journal, some remarks in relation to the practise of medicine and surgery in the United States; but more particularly in reference to that branch of the science which related to the treatment of the diseases of the eye

and the ear. Well known as I am as an aurist and oculist, having made these branches a special study under the most skillful and experienced professors in Europe, and having had much experience, both in this and the old country, in the line of my profession, what I have to advance upon the subject may not be wholly uninteresting to the public.

To this we may add a few paragraphs:

Some little effort had been made by the physicians in this country to restore the sight of the blind, but the important organ of the ear seems almost entirely to have been overlooked, and it is strange that amaurosis, or gutta serena—the name of the sympathetic blindness occasioned by disorders of the digestive canal and other causes—should be well understood, and discussed often in the divers medical periodicals published in this country, while the analogous disorder affecting the ear should never have received more than a cursory attention.

There are charlatans in all professions, from the man who places the spectacles on your nose, and calls himself oculist, optician, to the man that cuts your corns and styles himself Professor of the Physiology and Pathology of the Foot, and so on; all this is bad enough, in all conscience, but when it is practised in medicine and surgery, and particularly on such important organs, it comes an insufferable nuisance. It is worse than that—it is a crime. Hence, in every section of the country, the high sounding advertisements of these empirics are to be seen. The country is flooded with their handbills reciting the astonishing miracles which they have performed and the wonderful cures they have effected.

To such an extent has this practise of puffing and blowing obtained in this country, that the man of worth and science, who has really something of value to communicate to the public, hesitates about employing the same means which the unprincipled use to obtain notoriety. This should not be.

Then he reaches his real purpose:

What constitutes an oculist and aurist is, first, surgical skill as an operator, which requires more delicacy, steadiness of hand, nerve and discretion than all other operations; then, experience in the diseases of those organs, a perfect knowledge of the anatomy, pathology of the eye and ear. Armed with these and a love for his profession, fully conscious of the responsibility and anxious to fulfill his duty, one possesses what constitutes a good oculist and aurist.

Moschzisker must finally be given credit for the following suggestion which was not realized until many years had passed:

Let a committee of scientific men be appointed in New York, Philadelphia, New Orleans, Baltimore and other large cities, for the purpose of examining the qualification of those who wish to devote themselves to a specialty, and to those who are sufficiently qualified give a certificate. I myself, though by my writings on the eye and ear I should be well known to the profession, and possessing the credentials of the best European schools, am still willing to abide, for example's sake, by the severest tests of the faculty, as Oculist or Aurist.

Moschzisker's next publication takes a very different form:

Medici nugae. 2nd ed. 28 pp. Philadelphia. 1879.

In seeking to present this publication it is necessary to give more extensive quotations. It is directed to Hon. Bayless W. Hanna. In the Explanatory Note he writes:

I have not intended a Satire upon, or Caricature of the Medical Profession, or its truly worthy members, for many of whom I have the highest possible respect, a sentiment which I have reason to believe mutual in very many instances, however our opinions may differ as to the dignity and expediency of certain methods of conducting, what may be entitled, the business element of our practice.

My extensive professional experience in many States of the Union has so exposed to me (by their painful results in the persons of unnecessary sufferers,) the ignorance and incapacity of so many soi disant "Regular" physicians, which fact, in connection with the pompous vagaries of some provincial "Medical Societies," has so forcibly reminded me of the fable of "The Ass in the Lion's Skin," as to irresistibly impel me to the composition of the following stanzas.

There follows a "medical farce" in which all the characters are Doctors Cantharides, Lancet, Venesection, Hepatitis, etc., etc. The gathering is to "discuss the vital question of Science and the only manner in which Members of the Craft shall be Permitted to Exercise the Healing Art, and Conduct the Business Pertaining Thereto." The remainder follows in poetic form. First, an Invocation in which the Author speaks:

"O, sacred muse, who in the year agone
Hath gazed in love our spinning globe upon!
Send me thine aid—my flagging wits inspire—
And thrill my soul with bright Promethian fire!
Enable me, oh fairest of the Nine,
To wend my way among the streams divine,
Sharpen to keenest point my willing pen,
That fools and folly I may paint to men.
"O, Esculapius! rouse thee from the dust,
Thy help I seek—in thee I put my trust.
Awake! awake! ere human patience runs,
Awake! and list to thy degenerate sons.
Gaze on the world; behold the stupid role,
Played daily here by beings void of soul.
Read, ponder, speak, the honest truth declare,
And tell us if 'tis justice to forbear.
Trust claims thy voice; shake off the dust of death
And let the truth come thundering on thy breath.
But, ere thou speak'st, a moment pray forbear,

While I a trusty record now prepare,
Of the vast wisdom(?), pompousness and gas,
Displayed in council by each blundering ass.
I fain would meet their solemn members here:
While they discuss, I'll simply give an ear,
And then indite their wondrous freight of sense,
Or bigotry, of avarice and pretense.
Grim old Cantharides, of visage lean and spare,
With hem and haw, now gravely takes the chair,
He speaks: "My brethren, you will doubtless see
The great propriety of so selecting me
To thus preside. Our interests, I'm sure, are one,
The sick need work; by us it must be done;
But self-defense—proud nature's first great law,
Needs equal care; together we must draw,
In this great work; here firmly hand in hand,
As mountain range, immovable must stand,
The passes guard—let none go in or out,
Of whom we have the slightest ling'ring doubt.
Entrenched, we then may loud defiance fling
To special skill, from where so e'er it spring.
Our very food, our fees, our homes, our clothes,
We can secure alone by crushing those
Who boldly claim, by cultured hand and mind,
Hearing the deaf to give, and sight to the blind,
Consumption's course to stay, Catarrh make flee,
For this and more than this we hear and see!
I tell you, Sirs, no Doctor's income's sure,
When Specialists his chronic patients cure!
We must at once oppose all, every one,
Who differ with us how these things be done."
"My learned brothers, why not slay these men
By what is 'mightier than the sword'—the pen?
Lend me your ears, while I the thought confess,
'Twere wisdom for us to use the Press,
And show the world what we can also do;
This is my plan. Now, brothers, what say you?"

* * * * * * *

We may add a few lines from the end:

"Our brother's views, though generous, just and sage,
Utopian are, and quite beyond the age.
Prate as we may of being members all
Of a profession wise, bold, liberal,
We all know well—the truth we cannot blind—

'Tis a Trades Union of the strictest kind.
Our code of Ethics is, we can't deny,
A Juggernaut to him who dares defy
Or strive to loose the iron band abhorred,
By pride and prejudice together forged.
This we admit in secret session here,
Though still submissive to the world appear.
That gentlemen must need a code laid out,
To teach them honor, I beg leave to doubt;
As well on virtuous woman, by-laws waste,
On when and how to prove extremely chaste!"

A poem of about 425 lines!!

Moschzisker was quite a traveler in this country. In Boston ("During my stay for several months in Boston, when I daily attended, etc." referring to Drs. Hooper & Bethune of the Boston Eye & Ear Infirmary, p. XI, Introduction to *Guide to the Diseases of the Eye* etc. 1856); in Philadelphia (letter of dedication to Dr. Dunglison, same work); Washington (long newspaper advertisement, *Washington Nat. Intelligencer*, January 13, 1857. "Dr. Moschzisker is now making a Southern tour and will remain in our city for a few days. Those who need his services will therefore do well to embrace the opportunity. . . .") Similar advertisements appeared in many cities: *Charleston Mercury*, also *Evening News*, February 12, 1857. *Savannah Republican*, March 19, 1857. *Augusta Chronicle; Macon Telegraph*, April 20. *New Orleans Picayune*, February 1860. Letters of Commendation from Savannah March 17 and 26, 1857.

Many years passed without yielding further information when in 1925 the name of the Chief Justice of Pennsylvania, Robert von Moschzisker, caught my eye in glancing through a newspaper. A letter addressed to him brought the reply that he was the son of the oculist and aurist. It also brought a copy of the Polish Magazine *Poland* of March 1925 which contains a story, "The Mazurka," by Dr. Franz A. von Moschzisker and also a short biographical sketch with his portrait.

From this sketch we learn that Dr. v. Moschzisker "was born in Galicia in 1828; his father was a Pole and his mother a Saxon. Graduating from the *Cadetten* School in Vienna, he received a commission in the Austrian Army, but, in the uprising of '48 in common with many other officers of Polish and Hungarian extraction, he summarily left it to join the Hungarian Legion, subsequently being appointed an aide on the staff of General Klapka. He was captured as a prisoner of war, but escaped to

England. There the young exile devoted himself to literature and the study of medicine; he became "professor of modern languages in King's College, London." While in that city, in 1850, Professor Moschzisker brought out a book, *Guide to the German Literature*. "Returning to Germany, he finished his medical studies, and, after again visiting England, came to the United States, where he won success as an oculist and aurist."

Through the son I also learnt the date of the father's death in Washington as October 16, 1880, aged 52. Perusal of the Washington daily papers was rewarded by the following:

The Evening Star—October 16, 1880

Dr. von Moschzisker—a year ago opened his offices at 619-19th Street Northwest for the special treatment of

Deafness, noises in the head, impaired sight, catarrh, asthma, diseases of the throat, lungs, chest, etc.

His success has been most gratifying to himself and to many of the numerous patients who have been under his care, the majority of whom have been from the best class, Senators, Representatives, Lawyers, Clergymen, merchants, chiefs of Departments, etc. Without laying any empirical claims to infallibility, he has no hesitancy in asserting that he is willing that his professional record shall be compared with it's percentage with that of any specialist or physician in this city or elsewhere—His success was so great that he has resolved to make this city by SPECIAL REQUEST his PERMANENT RESIDENCE.

Among the testimonials of successful treatment already published, he would name those of Senator Voorhees, Senator Tugalls, Representative Sapham, C. H. Davidge, Esq., Frank Geies, Esq., besides numerous others. Over one hundred references to the very best citizens can be examined at his offices, 619-19th St., N. W., and he wishes it distinctly understood that no name as reference is given or letter of testimonial ever published which has not been placed VOLUNTARILY at his disposal for the purpose.

The *Washington Post*, October 16, 1880, contained a similar advertisement together with letters of high recommendation for successful treatment from the First Assistant Postmaster-General, Senator Voorhees, Chief of the Redemption Division, U. S. Treasury, two ex-cabinet officers, etc.

On October 18 the following appeared in the *Washington Post* on the front page:

DR. VON MOSCHZISKER—DEAD

Dr. F. A. von Moschzisker—the well known specialist in the treatment of throat and ear diseases, was found dead in his bed, yesterday morning, at his residence, 619-19th St. N. W.—He had retired, the night previous, apparently in good health.

Not appearing at breakfast, a servant was sent to awake him,—no response being received, the family became alarmed, and the door being broken down, the body of the Doctor was discovered, life having evidently been extinct some time. Drs. Morris and Hagner were called in and after an examination, gave a certificate of death from congestion of the brain.—Dr. Moschzisker had a national reputation. His success in the treatment of diseases of the throat and chest, had gained him numerous testimonials from the most eminent men in all walks of life in this country and in Europe. Well known in Philadelphia, where he resided for a number of years prior to his removal here a year ago, his death will be a surprise to his wide circle of friends there and elsewhere.—As an author Dr. von Moschzisker had attained some fame by publishing numerous works on the specialties which he treated with such success. At the time of his death his wife and children were absent in Philadelphia and a telegram was sent at once to them containing the sad intelligence.

In the summer of 1925 while in London the opportunity was afforded to look into the books Moschzisker had written while residing there. I found the following at the British Museum:

Das Studium der neuern Sprachen. London, 1850.
A Guide to German Literature. 2 Vols. London, 1850.
A Guide to the German Language. London, 1851.

The first of these as the title indicates is in German, with an English preface "reflecting deeply upon the subject of the important *gathering of all* nations of 1851!" The second, described as a manual to facilitate an acquaintance with the German classic authors, is dedicated to H. R. H. Prince Albert.

A copy of this work was presented to Thomas Carlyle, who replied in the following note:

Dear Sir:

I have received your book, which seems so far as I can examine it to be an excellent one of its kind; lucid, concise, correct, full of the needful information, to the exclusion of the needless, an authentic "guide to German Literature" in several very essential respects,—far surpassing at least anything we had before; and likely I should imagine, to be extensively useful when so many young people, little adapted to extensive studies, are learning to read German among us. I return you many thanks for the copy you have favored me with and am otherwise bound to acknowledge a good service done on your part to the whole English world.

Wishing heartily success both to your book and to yourself, I remain

With many acknowledgments
Yours very truly,
T. Carlyle.

It is to be noted that the author's name in all of these publications in England is given as Moschzisker without the " von "; even the one dedicated to the German Prince Consort!

He describes himself as student of philosophy, University of Leipzig, in the books which appeared in 1850 and 1851! Finally attention must be turned to the title " Professor of German " but no name of the College is mentioned. Inquiry made at the University of London, King's College, showed that he was certainly at no time a Professor of Modern Languages there.

From the information that has been gathered here, it is not possible to construct a definite statement of his early life. According to our information Moschzisker had just finished his military training when the revolution began in 1848 and he became an officer in the Hungarian Legion. When he was taken prisoner we do not know but he published his first two books in 1850 and the third in 1851 in London. We are told that he left England, " returning to Germany, he finished his medical studies there and after again visiting England, came to the United States." And then again we are told (by v. M.) that he came to Baltimore in 1852 having spent " some time " in Philadelphia and Boston.

There is still one final form of Moschzisker's writing of which mention has been made. In *Poland* (see above), a story appeared posthumously, entitled " Mazurka." It was given to the publishers by his son, the judge. It is a very lively tale of great romance in high Polish life, love, infidelity, ending in insanity. It is written as though the experience of the Polish student and his student friends at German universities.

In this and in his other writings v. Moschzisker shows a great literary skill, wit and wide reading. One cannot but be surprised at his versatility and the absence of any marks of foreign languages in the pure English.

In conclusion it is but proper to make added mention of Robert, the son of Dr. Moschzisker, who was very kind in furnishing the writer with information. He was but eleven when his father died,—his mother followed in a year. Robert was appointed to the Supreme Court of Pennsylvania before his 40th birthday. He died at the age of 69 in 1939. He was the recipient of many honors and stood in highest esteem in Pennsylvania.

His admiration for his father was expressed in a letter: " He was a genius in many ways," an opinion in which we can fully concur.

TRANSPORT AND THE DOCTOR IN GREAT BRITAIN

WILLIAM J. BISHOP*

The question of transport is one which affects everybody, from the strap-hanging typist to the statesman grappling with the problem of displaced and starving millions. We can well believe the expert who tells us that transport is today the greatest single factor in world economy. Apart from these high considerations, the subject of transport has a special interest for medical men on account of the many miles traversed by them in the exercise of their profession. It is doubtful whether the members of any other calling, not excepting commercial travellers, cover so many miles in the course of their daily work. Furthermore, medical men have played an important part in the development of almost every new means of locomotion, from the coach to the aeroplane.

In Italy during the Middle Ages it was the custom for physicians to ride upon mules, and in some towns the doctor was granted a mule or a horse by the municipality. At the end of the 13th century, the College of Medicine at Ferrara, in prescribing conditions under which entrants into the profession should be privileged to practise, enacted that each practitioner should possess a horse, upon which his patients were to be visited.

William Bullein in his *Dialogue against the Pestilence* (1578) gives the following picture of one of his rivals.[1] The scene is London in a time of plague: "For thither within this two hours I did see Master Toocrump (Medicus) solemnly riding upon his mule with a side goune, a great chain of golde about his necke, his Apothecary Crispinus, a neighbour's child borne hereby in Barbarie, and his little Lackey, a proper young apple-squire, called Pandarus, which carrieth the keye of his chamber with hym."

Down to about 1670 physicians of much practice would visit their patients on horseback, riding, however, sideways, on foot-cloths, like ladies. The foot-cloth was a large, richly ornamented cloth laid over the back of a horse and hanging down to the ground on each side. It was considered as a mark of dignity and estate. It was thus that the great

*From the Wellcome Historical Medical Library, London.

[1] Bulletin, W.: *A Dialogue against the Fever Pestilence*, from the edition of 1578. Edited by M. W. Bullen and A. H. Bullen (Early English Text Society), London, 1888, p. 9.

William Harvey could have been seen riding down to the College of Physicians or to St. Bartholomew's Hospital " very decent as the fashion then was—his serving man following behind," as Aubrey tells us.[2]

According to the contemporary account of Dr. Baldwin Hamey,[3] Dr. Simeon Foxe (1568-1642), youngest son of John Foxe, the Martyrologist, and Dr. John Argent (died 1643) were the last presidents of the College of Physicians to visit patients in London in this way.

Middleton the dramatist mentions the foot-cloth in his, *A Faire Quarrell* (1617), where he says:[4]

> Thou shalt have a physician then,
> The best that gold can fetch upon his footcloth.

Shirley in his play *The Ball* (1639)[5] refers to another appurtenance of the riding physician—the " pad "—when he speaks of

> Padua famous for the pads, or easy saddles, which our physicians ride upon, and first brought from thence when they commenced doctor.

At the very end of the 18th century a medical poet, Dr. John Wolcot (Peter Pindar)[6] tells us that

> Tis better riding on a pad
> Than on a horse's back that's bare.

There is some doubt as to the actual date when coaches first appeared. Stowe records the first coach as being that made in 1555 for Henry Manners, Second Earl of Rutland. Carriages of a kind were used in Anglo-Saxon times, but coaches of the type now properly so called were first known in England about the year 1580. For many years they were owned only by the nobility and by wealthy men of position. By the beginning of the 17th century they had become more prevalent. In 1601—at which time there were estimated to be about 6,000 coaches in and around London—a bill " to restrain the excessive use of coaches " was introduced and only rejected on a second reading.

The coach like every other novelty met with considerable opposition

[2] Aubrey, J.: *Lives of Eminent Men*, London, 1813, vol. 2, part 2, p. 386.

[3] Hamey, B.: *Bustorum aliquot Reliquiae* (MS. in Library of the Royal College of Physicians of London). Quoted by Munk, W.: *Roll of the Royal College of Physicians*, London, 1878, vol. 1, p. 113 footnote.

[4] Middleton, T.: *Best Plays*. Edited by Havelock Ellis (Mermaid Series), London, 1890, vol. 2, p. 217 (Act 1, sc. 1).

[5] Shirley, J.: *Dramatic Works and Poems*. Edited by A. Dyce, London, 1833, vol. 3, p. 81. (Act V, sc. 1.)

[6] Wolcot, J.: *The Works of Peter Pindar, Esq.*, London, 1794, vol. 3, p. 251.

at first, especially from the watermen! They were popularly termed "hell-carts," and, as at the present day, there were many objections against the noise of traffic in the streets. Gay, the poet, expresses the opinion of many who looked on the vastly improved vehicle of his day as no more than an excuse for extravagant display: [7]

> O happy streets, to rumbling wheels unknown.
> No carts, no coaches, shake the floating town.
> Thus was of old Britannia's city bless'd
> Ere pride and luxury her sons profess'd.

The doctor did not see the matter in that light, and medical men not only welcomed every improvement in the art of coach-making, but themselves made important contributions towards the development of the modern type of vehicle. In 1667 the Royal Society "generally approved" of a chariot invented by Dr. William Croone, the eminent physician, in whose memory the Croonian Lectures are still delivered. No particulars of this vehicle are given, but it was apparently one of many experiments in the direction of a light, swift carriage.

Dr. Peter Chamberlain (1601-1683), a member of the celebrated family of obstetricians, petitioned Parliament in 1665 "for a special patent for the sole making, for fourteen years, of coaches, waggons, carts, ploughts, etc., to go without horses, such as he saw at Augsburg fifty years past." [8]

Dr. John Archer (fl. 1660-1684), court physician and empiric, invented a chariot which enabled one horse to do the work of two.

Sir William Petty (1623-1687), M. D., famous for his work on political economy, was another medical man interested in transport. He designed a double-bottomed ship, and the *Philosophical Transactions* of 1684 contain his proposals for "Experiments to be made relating to Land-Carriages . . ." in order to determine such questions as "what is the difference between the high and low hanging of coaches, the distance of the Standards, and the difference between the hinder and the fore-wheels."

In 1670 it was becoming customary for physicians to make their visits in a carriage, and they then began to expect a double fee. This appears from an anonymous satirical tract, *Lex Talionis* (1670): [9]

> For now there must be the little coach and two horses, which in the day are very usual appendices to the Doctor in Physick; so that to say a Doctor goes to see a

[7] Gay, J.: *Poetical Works*, Edited by J. Underhill, London, 1893, vol. 1, p. 121.
[8] Richards, J. M.: *A Chronology of Medicine*, London, 1880, p. 200.
[9] *Lex Talionis; sive vindiciae pharmacoporum: or a short reply to Dr. Merrett's book*, London, 1670, p. 17.

Patient is too pedantick for our age: and being thus attended, half a Piece, their usual fee, is but ill taken.

Coming to the spacious days of Queen Anne, physicians became more magnificent in apparel and outward condition. They then rode in gilt carriages with two running footmen. No one would be better recognised. Physicians such as Radcliffe and Mead would have half a dozen horses to their coaches, and no fewer than four was the general rule. The

Fig. 1. The Fashionable Physician in his coach runs over his rivals. From a French engraving of the eighteenth century.

quacks as usual outdid the regular practitioners in magnificence. Sarah Mapp, the notorious bone-setter of Epsom, who flourished in the 1730's, drove up to London once a week in a chariot drawn by four horses, accompanied by outriders and footmen in splendid liveries.

It must be remembered, as Macaulay points out,[10] that four or six horses were not always a luxury, as no less a number would suffice to get the coaches over the bad roads and out of the mud. With any smaller number there was great danger of sticking in the mire, and we must not always attribute to magnificence what was really the effect of necessity.

[10] Macaulay, T. B.: *History of England*, London, 1849, vol. 1, p. 377.

In the diary of Dr. Claver Morris of Wells,[11] kept from 1684 to 1726, we read that the doctor preferred to make his slow and hazardous journeys in a calash, rather than riding as was the general custom, even though the horses were sometimes so bemired that a yoke of oxen had to be borrowed to drag them out of the ruts.

Sydenham several times refers to his coach. He made morning and afternoon rounds and used to drive out from his house in Pall Mall to Acton after dinner for a change of air. Sir Richard Blackmore, M. D., wrote his interminable odes, as Dryden says "to the rumbling of his carriage wheels"; or, as Tom Moore expressed it:[12]

> 'Twas in his carriage the sublime
> Sir Richard Blackmore used to rhyme.
> And if the wits don't do him wrong,
> Twixt death and epics passed his time,
> Scribbling and killing all day long.

Hackney coaches were let out for public hire as early as 1605, and in 1633 there was a regular "rank" for such coaches in the Strand. In the preface to his *Nugae Metricae* (1842) Sir Henry Halford tells us that "most of the following trifles were written in the carriage."

The great John Coakley Lettsom (1744-1815), like many of his contemporaries, spent much, not only of his days but also his nights, in his travelling coach. He writes in a letter of September 3, 1795: "As I live in my carriage, seldom having less than three pair of horses a day, and neglecting my meals, except once a week that I dine with my wife, I have some time to preserve my correspondence, having always in the carriage, pen, ink and paper, to amuse myself if I do not amuse my correspondents."

In 1747 a tax was levied on coaches, about which a great fuss was made. Some verses printed in the *Gentleman's Magazine* at the time may be quoted as reflecting the general opinion about the bill:[13]

> Coach, chariot, chaise, berlin, landau
> (Machines the ancients never saw)
> Indulge our gentle sons of war,
> Who ne'er will mount triumphat car.
> The carriage marks the peer's degree,
> And almost tells the doctor's fee;

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[11] Morris, C.: *The Diary of a West Country Physician, A. D. 1684-1726.* Edited by E. Hobhouse, London, 1934, p. 105.

[12] Moore, T.: *Poetical Works.* Edited by A. D. Godley (Oxford Edition), London, 1910, p. 507.

[13] *The Gentleman's Magazine*, London, 1747, vol. 17, p. 94.

Bears ev'ry thriving child of art;
Ev'n thieves to *Tyburn* claim their cart

. . . . . .

*Rock** must enhance the price of pills,
Or drive again—one pair of wheels.
The graduate too will be to seek,
Who mounts his chariot twice a week.

The following "Advice to a young London physician" is taken from the fourth of the "Intercepted Letters" which appeared in the *Lancet* of 1833-34 and which alternately amused and scandalised the profession at that day:

It is a very general, and, I believe, a just opinion, that a physician is never considered worthy of his fee unless he comes in a *carriage*. The carriage and liveries ought to be of rich colours, so that all the world may soon know to whom it belongs. Keep perpetually driving about in it; and though the appearance of the horses matters not, yet it is of great consequence that they go quickly, or at least *appear* to go quickly. Nothing looks so like business as the coach being well bespattered, and the horses covered with perspiration. You should seat yourself in it in a prominent attitude, and make it a rule to be employed *writing*. I always have mine filled with loose papers and notes, and have an ink-holder, with a large watch hanging before me, so that when I stop any one in the street to speak to me I look like a Cabinet Minister, that is to say—*fully employed*.

Have the carriage out the whole day, whether you are in it or not: . . . The late Mr. Heaviside** always contended that his cream-coloured carriage, picked out with sky-blue, and a pair of gray horses, hooked many a patient for him, as everybody knew the vehicle, it was so conspicuous.

When you can manage it, let your carriage stand as often and as long as possible at the doors of distinguished characters, such as Bishops, and men of power,—men filling the high offices of state.

The eminent physicians of Victoria's day took a great pride in their horses.

According to Dr. William Munk, his biographer, Sir Henry Halford, physician to four sovereigns and President of the Royal College of Physicians for twenty-four years, kept greyhounds and took a pride too in his carriage horses, which were always fast, well-bred, and handsome. He drove very fast through the streets of London. "Those of the West End, with which he was principally concerned were far less crowded then than now; and I have heard it said at the time, I know not how truly, that his coachman was always provided with Sir Henry's card, which in

* "Dr." Rock, a quack who frequented the neighborhood of St. Paul's.
** John Heaviside (1748-1828), F. R. S., Surgeon-Extraordinary to George III.

the event of a collision or other trifling accident he might drop and drive on, without pulling up or delay." [14]

No doubt the streets of the West End were far less crowded then, but one wonders what the Eel-backed Baronet, as the *Lancet* irreverently dubbed the august President, would do in these days of Traffic Lights and Belisha beacons, and one can conjure up a picture of Sir Henry's Rolls being pursued by the Flying Squad.

Readers of Surtees will remember that Dr. Sebastian Mello, one of the two rival practitioners of Handley Cross Spa, unlike his neighbour Roger Swizzle, who either trudged from patient to patient, or whisked about in a gig, drove to and fro in a claret-coloured fly, drawn by dun ponies. Through the plate-glass windows a glimpse of his reclining figure might be caught, lolling luxuriously in the depths of its swelling cushions, or musing complacently with his chin on a massive gold-headed cane.[15]

Another distinctive turn-out was that of Dr. John Charles Weaver Lever (1811-1855), lecturer on midwifery at Guy's Hospital, who had an enormous practice. "No carriage was better known than his, with its red bordering and red wheels, which gave it the appellation of 'Lever's fire-engine.'" [16]

Dr. James Blundell, the celebrated obstetrician, also of Guy's, who left a fortune of £350,000, always drove about in a large yellow chariot.

In 1634 Sedan chairs were introduced by Sir Saunders Duncombe, M. D., who for a time held the exclusive right of supplying such chairs as could be had for hire. Evelyn, the diarist, says that Duncombe brought the Sedan from Naples. The word Sedan is of obscure origin and, according to the New English Dictionary, is *not* derived from the French town of that name, as is commonly supposed. Dr. James Hamilton, the Younger (died 1839), professor of midwifery at Edinburgh, visited his patients in a Sedan chair as late as 1830 and is said to have been the last person in Edinburgh to employ such a vehicle.

Among various odd modes of transport adopted by members of the profession we may mention the white pony painted with purple spots of the 18th century quack Martin van Butchell and John Hunter's buffaloes. Jesse Foot in his scurrilous life of the great surgeon describes "those buffaloes which Hunter so lately as 1792 put into harness and trotted

[14] Munk, W.: *The Life of Sir Henry Halford, Bart.*, London, 1895, p. 277.
[15] Surtees, R. S.: *Handley Cross*, London, 1845, chap. 2.
[16] Wilks, Sir S., and Bettany, G. T.: *A Biographical History of Guy's Hospital*, London, 1892, p. 375.

through the streets of London," implying that Hunter used the beasts to draw his own carriage. The truth was that the buffaloes formed part of the collection of strange animals kept in the grounds of Hunter's house at Earl's Court and that they were used to take vegetables and other loads to and from his dissecting rooms in Leicester Square.

But the great stand-by of the travelling medico, especially of the coun-

Fig. 2. The Physician and his Retinue. From an eighteenth century print.

try practitioner, has always been the horse. In *The Surgeon's Daughter* (1827) Sir Walter Scott introduced us to Mr. Gideon Gray, surgeon in the village of Middlemas, "whose few wants were amply supplied by a professional income which generally approached two hundred pounds a year, for which upon an average he travelled about five thousand miles on horseback in the course of the twelve months." This worthy surgeon had two ponies, Pestle and Mortar, which he exercised alternately. There have been thousands of Gideon Grays, but they make no great figure in medical history.

The Country Doctor's Horse: A Tale in Verse by Sir John Dean Paul, Bart. (1847), tells the story of one of these heroes of the countryside,[17] Dr. Healum:

> Beloved he was by all the country round;
> Of gentle nature, and of skill profound;
> Trusted by all—by most believed to cure,
> As Doctor, Surgeon, Dentist, Accoucheur.
>
> The Doctor's nag bore Pestle for his name,
> That shared the Doctor's labours and his fame.
> Not to the sick, or med'cine was confined
> The active impulse of the Doctor's mind;
> Oft in the field he showed an equal skill,
> Could save a patient, or a fox could kill.
>
> Nor less was Pestle known—lean, fleet, but good,
> By some suspected of the Whalebone blood.

Of the doctor's wife we read:

> Six lovely babes to Healum had she borne,
> And these in order due each Sabbath morn
> Must Church attend; and that was deftly done,
> For Healum's credit, in a chaise and one.
> That one was Pestle—he, immortal steed,
> Employed alike for pleasure or in need.

The late Sir Robert Charles Brown of Preston, who died in 1925 at the age of 89, tells in his autobiography *Sixty-Four Years a Doctor* (1922) how he witnessed the discontinuance of stage coaches and Sedan chairs. He went to Blackpool and Southport some time between 1890-92 to see motor cars in the experimental stage.

Few things have affected the doctor's life more profoundly than the coming of the motor car, which reached England about 1896-98. The medical journals of the time contain many amusing references to the new-fangled things and many protests against the "Motor Car Scourge" on account of noise, dust, smell, etc. One doctor, writing in the *British Medical Journal* of 1907,[18] gives his experience with a car: "I should be sorry to go back to horses again, but there is no getting over the fact that a motor cannot be expected to run every day in the year."

The *Lancet* of June 17, 1899 has an editorial on "The Development

[17] Paul, Sir J. D.: *The Country Doctor's Horse: A Tale in Verse*, London, 1847.
[18] Marriner, W. H. L.: Twelve Months with a Motor Car. *Brit. Med. Jl.*, 1907, vol. 1, p. 454.

of the Motor Car" in which we are told that "motor cars can never be a fashionable craze with a horse-loving people, and their practical usefulness, except perhaps as weight carriers on roads ascertained to be suitable, has yet to be demonstrated."

Fig. 3. John Shiells (d. 1798), surgeon and apothecary of Edinburgh, who made his rounds on a gray pony followed by a boy who carried his walking-stick and held the pony, while his master was in the houses of his patients. From John Kay's *A Series of Original Portraits*, Edinburgh, 1842.

Doctors were undoubtedly the first large group to experiment seriously with the car and to keep records of its cost and performance. We read of such pioneers as Dr. F. M. Crane of Redfield, South Dakota, who, in 1905, "disgusted with his balky car and the impotence of local mechanics, learned to drive by ear, using his stethoscope and anatomical knowledge

to diagnose the assorted gurgles, clanks, and groans of the engine"; [19] and of Dr. Charles Sylvester of Dorchester, Mass., who kept a seven months' record of costs and reported that his car cost $159.75 against $268.10 for a horse and carriage.

Charles Barrett Lockwood (1856-1914) is said to have been the first member of the staff of St. Bartholomew's to drive to hospital in his own car (c. 1905). This was painted a bright scarlet and was known as "The Red Peril." In 1906 Lockwood was chairman of a "Committee of medical men who are users of motor cars."

Sir Henry Thompson, Bart., the celebrated surgeon, who contributed a chapter on "Motor-Cars and Health" to the volume on *Motors and Motor-Driving* in the Badminton Library (1902) states that driving improved his health: "The easy jolting which occurs when a motor-car is driven at a fair speed over the highway conduced to healthy agitation; it 'acts on the liver,' to use a popular phrase, and promotes intestinal peristalsis." [20] He thought motoring had one disadvantage not applicable to horse riding; in that to remain seated in one position, with little or no opportunity of moving the lower limbs, renders them liable to stiffness or cramp, and he advised alighting at the end of a drive of 20 miles and running smartly for about 200 or 300 yards! He had known "instances of ladies suffering from defective nerve power who have derived great benefit from the invigorating and refreshing effect of meeting a current of air caused by driving in an automobile."

Before leaving the road let us remember Sir Goldsworthy Gurney (1793-1875), a surgeon who gave up practice to devote himself to research in connexion with locomotion. In 1829 he made a journey with his steam carriage from London to Bath and back again, at fifteen miles an hour on the ordinary roads. He performed the last eighty miles from Melksham to Cranford Bridge in ten hours, including stoppages. This was the first long journey at a maintained speed ever made by any locomotive on road or rail, and the medical profession may well be proud of this great surgeon-inventor.

The story of the great part played by medical men in the development of aviation has often been told [21] and we can only refer to a few pioneers.

[19] Editorial: The Doctor and the Horseless Carriage. *New York State Jl. Med.*, 1945, vol. 45, p. 1482.

[20] Thompson, Sir H.: In *Motors and Motor-Driving*, by Alfred C. Harmsworth (and others) Badminton Library, 2nd edition, London, 1902, p. 79.

[21] Hodgson, J. E.: *The History of Aeronautics in Great Britain*, London, 1924; Poynton, F. J.: Doctors and the Dawn of Aerostation. *Proc. Third Int. Cong. Hist. Med.* (London, 1922), Antwerp, 1923, p. 101.

Fig. 4. The doctor's transport in the 1890's. From the *Medical Directory* of 1895.

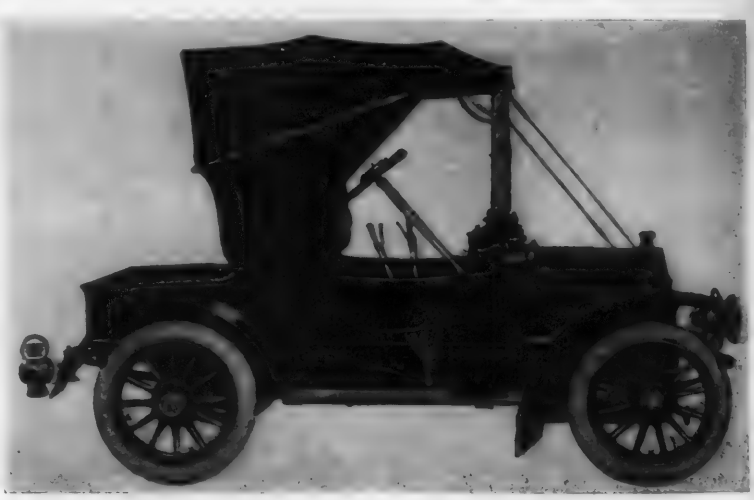

Fig. 5. Motor-car of 1907. From an article on "Motors for Medical Men," *Brit. Med. Jl.*, 4th May 1907.

James Tytler (1747?-1805), a Scottish surgeon, commonly known as "Balloon Tytler," was the first man to ascend in a balloon in the British Isles, in August 1784.

On October 19, 1784 John Sheldon (1752-1808), professor of anatomy at the Royal Academy, where he succeeded William Hunter, made a balloon ascent with J. P. Blanchard from the grounds of the Chelsea Military Academy.

Fig. 6. Sir Goldsworthy Gurney's Steam Coach, 1833. From an old print.

The first real aerial voyage in England was made by the Italian Lunardi, who in September 1784, ascended from the Artillery Ground in Moorfields and landed at Ware in Hertfordshire. Dr. George Fordyce, physician to St. Thomas's Hospital, who was also a distinguished chemist, superintended for Lunardi the serious process of filling his balloon with gas.

Dr. John Jeffries, a Bostonian, was with J. P. Blanchard, the first to cross the Channel in a balloon on January 7, 1785. The voyage was made from Dover to a point a little to the right of Calais in about two hours. Jeffries, who was a very keen aeronaut, financed the whole undertaking.

The aeroplane now carries the consultant across the oceans, and in the wilds of Australia it enables the doctor to make his daily rounds over thousands of miles of bush and desert. We have not reached the end of the story of the doctor and his transport, but let us recall the prophecy of a medical poet, Dr. Erasmus Darwin, in his "Botanic Garden" (written in 1789-91):

> Soon shall thy arm, unconquered steam, afar
> Drag the slow barge, or urge the rapid car;
> Or on wide waving wings expanded bear
> The flying chariot through the realms of air.

PEASANT REMEDIES FROM THE GREEK ISLANDS

A. RAYMOND MILLS

Throughout the islands and mountains of Greece the peasants and fisherfolk have lived almost untouched and unchanged for centuries.

In isolated villages the old pagan beliefs of classical antiquity and before, with a sugar coating of Christianity, are surviving still and are a powerful force in the lives of the islanders. Modern medicine is practised all over Greece, but in the more remote villages are to be found the "practical women" (praktikí gyaíka) and the bone setter who carry on the ancient methods of treatment of disease. Many of these treatments are secret and lose their efficacy if divulged to strangers. They are a mixture of paganism, Christianity, superstition and common sense.

I collected these remedies during my service in the Aegean Islands from January, 1945 to April, 1947, when I was a member of Force 281 MEF. and later a member of the British Military Administration of the islands. I lived in several of the Dodecanese during this period, and for the last year of my stay I was Senior Medical Officer in charge of the Terme Civil Hospital, Rhodes. This hospital (200 beds) served Rhodes island, all the Dodecanese, and patients came from even further afield in the Aegean area. I started to take an interest in peasant remedies because I saw so many cases after they had been treated by these methods.

All this material was collected by personal interview; my Greek is fluent, but very often it took me a considerable time to persuade my informants that my interest was entirely scientific and that no harm would come if they divulged their secrets to me.

I made the acquaintance of two of the well-known bone setters of Rhodes. One was a priest who had practised for twenty-seven years. He was the fourth generation of his family to practise this trade. He did not accept any money for his work and confined his activities to fractures and dislocations only.

The other was a woman who had practised for thirty years. She had learnt from her father, who in turn had learnt from his mother, who again had learnt from her father. Maria, as she was called, did bone setting, but she also treated other complaints and did midwifery, and received payment for her work. Both these practitioners received patients

from far and near. Apart from these "specialists" I made the acquaintance of several "practical women" who practised in their own villages, who had developed a certain skill in treatment with herbs etc. and who were only locally known. Another source of these remedies was found amongst the domestic staff of my hospital, many of whom knew the treatments and who practised a little amongst their relatives and friends. All of these people were either peasants or fisherfolk, and if they did not know these remedies they could always put me in touch with the person who practised them.

Apart from their inherent interest, these remedies are a link with the past, and sometimes remote antiquity. It would be of great interest to trace the spread of this "culture." There are methods used which are identical in principle with those used in ancient Mesopotamia. Everybody in England knows that a bleeding nose can be stopped (???) by putting a door key down the back of the neck; in Greece the same method is used to stop lactation.

In transcribing the Greek characters I have used the following Latin characters:

y — ypselon, ch — hee, d — delta, th — theta, v — vita.

The oke (óka) is a Turkish measure used also in Greece, it equals 2 lbs., 12 oz. It is divided into 400 drams (drámia) so that 1 lb. — 146 drams.

GLOSSARY OF GREEK PEASANT REMEDIES

ABORTION. (apovolí)

1. Large doses of quinine.
2. The water in which parsley is boiled is taken on an empty stomach. Abortion is not frequently practised.

ABSCESS. (apóstima)

1. Crushed onions with mastika are put on hot as a poultice.
2. Scoup out the centre of an onion and fill with sugar, incense, powdered dried reed, olive oil, and a little soap. Cook in the oven and apply to the abscess hot.
3. Snails are gathered, taken out of their shells, ground up, and applied.
4. Baked potatoes without their skins are mixed with oil and sugar and used as a poultice.

ADENITIS. (adenitis)

1. Pills made of tar are taken, 5 daily. Also pills made of alum and rice, rolled in flour.

2. Pine seeds 10
   Fish glue 50 drams.

The above are boiled in half an oke of water and a glass of the liquid is taken each morning.

ANEMIA. (anaimía)

1. Quinine root 100 drams
   Sugar 100 "
   Cinnamon 50 "
   Fvouda kara-gáts 100 "
   Quinine extract 1 "

The above are boiled in three okes of water and three glasses of the liquid are taken daily.

2. Acorns 6
   Quinine extract 100 drams
   Wine 1 oke
   Sugar 100 drams.

Boil the above and take a cupful each morning.

ANURIA. (anouría)

100 drams of caraway seed are toasted in the oven and ground into a fine powder. This powder is infused in 1 oke of water and a cupful of the liquid is taken as required.

BALDNESS AND FALLING HAIR. (falakrós)

1. Mix garlic, dynamite powder, and powdered roofing tile and make a paste with water. Shave the head and apply the paste. Cover the paste with cow dung.

2. The dung beetle is powdered, mixed with alcohol and dabbed onto the bald patches.

3. Two yolks of egg are added to powdered dry fig leaves. This paste is put onto the hair. It cures baldness and dandruff.

BIRTH. (génnisis)

This is often performed in the sitting position, and a chair cut away in the seat is used specially for this purpose. (The squatting position is now being tried by a London hospital.) In the Cyprus Museum there is a terracotta figure of a woman giving birth and being held up by the arms in the sitting position, with a helper delivering the baby. This figure dates from 500 B. C. and shows a strong Phoenician influence.

To bring on labour pains bran (pityron) is boiled and wrapped up in a cloth and applied to the abdomen hot. A hot tile (keramídi) is used in a similar way to apply dry heat.

Seven days after the birth of the child the midwife puts her bare foot on the vulva of the woman and pulls each hand in turn. A vaginal douche is then performed after which sexual intercourse is permitted. This treatment is supposed to replace the genital organs and its efficiency was vouched for by a woman who was the mother of fifteen children!

BRONCHITIS. (vrogchitis)

Boil half an oke of eucalyptus leaves in water. To this add one egg and sugar. A cupful is taken twice daily.

BURNS. (égkayma)

Ink is used in a similar way to tannic acid.

In the majority of cases mastika is applied liberally and a light dressing put on. Infection is said never to occur with this method.

CALCULUS. (ámmos)

Parsley water. See Abortion.

COMMON COLD. (psýchra)

Crude sheep's wool is dipped into a mixture of paprika and mastika. The whole body is rubbed vigorously with the wool.

CONJUNCTIVITIS. (tsímpli)

Wash out eye with sap of vine or tears. Or with cow's or human urine. An ophthalmologist friend of mine has seen bilateral gonococcal conjunctivitis as a result of this method. The child lost the sight of both eyes.

CONSTIPATION. (dyskoiliótis, frýxi)

1. Powdered dry fig leaves with water.
2. Bilberry flowers or leaves are boiled in water and the liquid taken.

CONTRACEPTION.

A small piece of sponge soaked in olive oil is used by the woman as a tampon.

CORNS. (kálos)

Apply the sap of a fig tree mixed with a herb sampourióu.

COUGH. (víchas)

1. Pills made of boiled tar.
2. Drink the water in which the leaves of the herb skorpidóchorta have been boiled.
3. Boil quince seeds and drink a cupful of the water each morning. This is also useful for a headache.

CUPPING. (ventúsa)

This is a very popular form of treatment for headaches, coughs and colds and any pains, especially of the chest and abdomen.

Two types of cupping are employed: simple cuppings in which the alcohol is lighted in the cup and this is applied directly to the body, or the "cut" variety in which three or four incisions drawing blood are made and the cup placed directly over them.

For a severe headache the head is shaved and the cup applied to the site. For abdominal pain the cup is placed over the umbilicus.

DIARRHOEA. (diárroia)

Take one yoke of egg and 3 or 4 spoonfuls of coffee and make pills. Take three or four pills daily.

DISLOCATIONS, SPRAINS AND BRUISES. (exárthrosis, ekchymosis)

Dislocations are reduced rapidly by bone setters. For the pain and swelling absinth (apsínthia) warmed with hot olive oil is specific. Wild fig plasters are also used.

DYSPNOEA. (dýspnoia)

Take 100 drams of eucalyptus leaves, 50 drams of crude sugar and one white of egg. Boil together and take a cupful of the liquid when cool.

EPISTAXIS. (epistaxis)

1. Cook octopus eggs. Make a powder of them and from the powder an infusion. Take this preparation.
2. Place a piece of paper on the palate and another piece on the sole of the foot.
3. Squeeze a lemon into a cup of coffee and drink it.

ERYSIPELAS. (apart from the classical word are used fókio, and anemopýroma = wind fire)

1. Dissolve copper sulphate in mastika and massage into the area.
2. A piece of red cloth is put on top of the area of the rash. Seven pieces of resinous wood and seven small pieces of cotton wool are used. A piece of cotton wool is placed on top of the red cloth and a piece of resinous wood on top of the cotton. The wood is lighted and as soon as the cotton takes fire it is flicked off with the finger and the following words are repeated. The whole process is repeated seven times:

"káto stó gialó stín ámmo
oí spanói zeygári kánoyn
vázoyn tís psolés tón alétri
kài t'archeídia tón zeygári·
Mi òspóros tón matiásei
míti fókio na rizósi."

This may be translated as follows:

"Down on the beach, on the sand
the beardless ones are mating,
they use the penis like a plough
and their testicles like a pair of oxen.
Let not the Evil Eye fall on the seed (sperms)
nor the erysipelas take root."

This is strongly suggestive of the ancient phallic ceremonies in which foul words and gestures were used to ward off evil spirits and at the same time, ensure fertility.

EVIL EYE. (káko máti, vaskanía, mátiasma)

This belief is widely held not only in Greece but throughout the Middle East. A sudden sensation of sickness, malaise, headache, or dizziness is considered to be due to the Evil Eye. Beauty, health or ability must not be openly admired or the Evil Eye will take effect. Human saliva is specific against the Evil Eye. My wife was greeted by an old peasant woman who remarked how well she

looked and at once followed the remark by spitting full in my wife's face. My wife had the fortitude to smile through this well-meant action.

Blue pearls or beads if worn continually will give protection. A piece of fisherman's twine (dichti) worn round the waist will protect against all accidents.

FRACTURES. (kátagma)

These are reduced very rapidly (so it is claimed) and without pain, as also are dislocations. Immobilisation is performed by surrounding the fracture with reeds, bamboo, or cardboard, packed with cotton wool and held together with bandages. Fractures are kept in splints for at least forty days, but the patient is seen daily and the bandages are loosened if necessary. Fractures into the elbow joint are treated in extension with immobilisation, the bone setters claiming that full extension of the limb is more difficult to achieve than full flexion. This is the reverse of orthopaedic teaching. Fractured thigh is reduced by manual traction. (All bone setters are powerfully built!) In these cases the splint extends from the tip of the toes to the top of the thigh.

Fractured clavicle is either bandaged or immobilised by adhesive plaster. A pad is put into the axilla and a bandage holding it in position and at the same time bracing back the shoulder to extend the bone is applied. Sticking plaster is made from cloth soaked in mastika containing a large quantity of mastika resin.

Compound fractures are treated in a similar way, mastika is poured into the wound which is covered with gauze and the limb is immobilised. Dressings are changed daily. For swelling in the region of the fracture, see under "Dislocation." Mastika is often poured onto fractures. It is reputed "to strengthen the nerves" and it does not cause skin eruptions as does stronger alcohol.

GANGRENE. (gággraina)

Wash part and apply dolly blue or powdered tortoise shell.

GONORRHOEA. (vlenórroia)

1. Half an oke of sea water mixed with lemon juice, take 3 small cupfuls daily.
2. Donkey's milk three times a day.
3. Pills are made with rice flour, powdered alum and tar. Pills are also made with cedar resin, mint leaves, quince leaves and other wild herbs such as kalamidi, pentanéyra.

GRAVEL. (líthos)

1. Make toast, soak in water and drink the water.
2. Boil the seeds of the cedar tree and drink the water.
3. Parsley, celery and mint leaves boiled together. The mixture is strained and a cupful of the liquid is taken three times a day.

HAEMORRHAGE. (aimorragía)

1. Firm bandaging. "In the case of compound fractures exact reduction is needed to stop the bleeding" (I quote a village bone setter).
2. For all bleeding, the wild tobacco leaf is split open and the fibrous stroma of the leaf is put on the wound. This stops bleeding.
3. The root of the pear tree is boiled with one oke of wine and the skins of onions. A cupful of the liquid is taken.
4. Octopus eggs are boiled with soap and wine and the fluid taken.

HAEMORRHOIDS. (aimorroides)

1. Pills are made from alum and tar. Take two pills each morning.
2. Put alcohol into a hot aubergine and apply to the haemorrhoids. Take off after some time and apply ice. Repeat this five or six times.

HEADACHE. (ponokéfalos)

Cupping or leeches if the pain is severe.

HEART DISEASE. (asthéneia tis kardia)

Pumice stone is cooked in the oven, ground into a powder and taken with a lot of water three times a week.

HERNIA. (kíli)

Rub hernia with mercury and put lead grapeshot on top with firm bandage.

IKON. (eikón)

These are sacred paintings or mosaics of saints. Often almost entirely covered with engraved precious metals and surrounded by gifts of silver and gold coins and other offerings. These paintings are themselves regarded as sacred and to have healing power. It is believed that if the family of a sick man pray to the ikon for the recovery of the patient, the prayers will be answered. A silver image of the part of the body affected is attached to the ikon and left there as an offering.

JAUNDICE. (ikterós)

1. Inhalation of lemon juice is effective.
2. Seven vertical incisions are made between the eyebrows and seven on the vertex. If resolution does not occur, three or four incisions are made under the tongue.
3. In a child, micturating over caper (kápari) will make the jaundice pass.
4. A bottle of wine is taken and a gold ring or other object placed in it. The bottle is exposed to the stars for three nights. The priest is then called and blesses the wine. When the wine is taken the jaundice will pass.

LACTATION. (galaktochía)

An amber bead hung round the neck of a pregnant woman will ensure a plentiful supply of milk, as will wine and hot bathings. If the mother wishes to stop lactating, a key is hung down the back inside the clothes. Mud from flat roofs (patelia) is made into a paste and smeared on the breast to stop the flow of milk. (This is an interesting link with the Egyptian arabs who use mud from the roof for the same purpose, the mud in this instance containing dung.) If a woman suckles her child she believes that she cannot become pregnant, during that time. I have seen children being suckled at the age of three and a half years.

LEUCORRHOEA. (leykorroía)

Take roots of reeds and celery. Boil with sugar and take the liquid daily.

MALARIA. (thérmi, elonosía)

1. Make plasters on the neck with boiled artichoke.
2. Empty the kernel out of a walnut and fill the nut with garlic, sarkofágos (a herb) and vinegar. Tie the nut onto a vein on the back of the hand and allow

the contents of the nut to be in contact with the skin for three days. This will form a blister.

3. The mountain herb pikróchorta is boiled and the liquid is taken daily for forty days. Malaria is believed to be caught from cold air.

MANIPULATION.

This is performed for stiff joints (aggýlosis). Pig fat massages being very good for any muscular sprains or stiffness.

MASTIKA. (oýzo, árak)

This is the spirit distilled by the peasants. It is made from raisins, the liquor produced being flavored with mastika resin from the mastika tree. Chios is famous for its mastika groves.

MEASLES. (ilará)

If the patient is covered with a red blanket the disease will pass. The molasses of unfermented wine (petimézi) from the black grape are boiled with sugar until a thick sort of jam is made. If this is taken by the patient the disease will pass quickly and without complications. (Treatment with a similar preparation was advocated in the *Brit. Med. J.* a short time ago.) These molasses are also used for other fevers and for vomiting.

MENINGITIS. (miniggítis)

The cut type of cupping is applied from the top of the head all down the spine.

NASAL POLYPUS. (called "octopus of nose" in Greek)

Gerkin flowers are dried, powdered and inhaled.

NEURASTHENIA. (neyrasthénia)

For erotic dreams make an infusion of peach tree leaves and take when a discharge occurs. Parsley, mint, thistles, etc. are all made into infusions and taken for neurasthenia.

ORCHITIS. (orchítis)

Make a plaster with bread, oil and milk.

OTITIS. (otítis)

Fry two egg yolks in olive oil. Instil this oil into the ear. This relieves pain.

PLEURISY. (pleyrítis)

Petrol plasters, bran plasters, mastika plasters. Cupping both dry and cut.

PREGNANCY. (egkymosíni, gastroméni)

The desires of the woman for unusual foods at unusual times must be satisfied. If she does not satisfy her desire and happens to touch her body at the same time, the baby will be marked where she has touched herself. The birthmark of the child is also supposed to indicate the nature of the desire.

Indigestion during pregnancy is due to the unborn infant developing hair. The indigestion is cured by a spoonful of sesame seeds. Coffee is applied to the umbilicus of the newborn infant as an astringent and antiseptic.

A pregnant woman must not cross her legs on sitting down because the child will have the "cord round the neck."

PROLAPSED UTERUS. (ptósis)

Absinthe and wine are used as a compress on the vulva after birth. A half boiled egg is put into mastika and cumin (kímeno) and this is applied as a plaster on the prolapsed uterus to reduce ptosis.

RHEUMATISM. (reymatismós, réyma = a current)

1. The following paste is made:

1 oke aromatic herb (kápari = kaper)
1 " olive oil
1 " white soap

This is warmed and the paste is applied over the affected part and a sun bath is then taken. The effect of the sun together with the paste relieves pain.

2. Pastes and liniments are made with vinegar, garlic, turpentine, olive oil, eggs, camphor, sesame, mastika separately or together. Also beeswax and cloves.

SEX.

To determine the sex of an unborn child the following methods are used:

1. When the woman is seven months pregnant, a drop of breast milk is expressed into a glass of water. If the milk dissolves, the child will be a female. If the milk drop remains fibrous and upright in the water, it will be a boy. The latter is obviously a phallic symbol.

2. A knife and a pair of scissors are placed each on a seat and covered with a cushion. The expectant mother is sent out of the room while this is being done and she is called in to choose a chair. If she sits on the knife, it will be a boy; if she sits on the scissors, it will be a girl. The knife is another phallic symbol.

SMALLPOX.

The Greek name is "eylogía." This means "she who must be named with respect." This is a reference to the fear of omnipotent destructive spirits. They must not be offended. Hence the respectful name. Compare with Evil Eye.

SNAKE BITE. (dágkama feidióy)

Ground up deer's horn is taken as a powder.

SPLENOMEGALY. (splenomegalía)

Capers, apple tree bark, cloves and alum are prepared as potions.

SPOTS ON THE FACE. (máyres)

Dip a hot iron in water several times, and use the water as an application.

SYPHILIS. (sýfilis)

Asparagus root, aubergine, pine resin are all used in various preparations.

TEETH. (dóntia)

Pliers are used for extractions and creosote is used for toothache. For cleaning teeth burnt honeysuckle flowers are used.

TONICS.

Melons, cloves, honey, quinine, ferrous sulphate, powdered pine cones, mulberry bark, unwashed hair of sheep, cinnamon, capers, alum. All the above are used in various preparations.

TUBERCULOSIS. (fymatiosis)

Tar with rice flour, and egg in the form of pills is used.

VARICOSE VEINS. (flevitis)

First a vapour bath with vinegar and garlic is given to the affected part. This is followed by massage with olive oil, turpentine, salt and vinegar all boiled together. This treatment is repeated five or six times a day.

WOUNDS. (tráyma)

1. Tobacco, mastika and onion are all common applications.
2. Wash wound with soap and water and apply mastika, camphor and oil mixed.
3. Boil cherry leaves in wine. Put the boiled leaves onto the wound. The leaves are removed after several hours and the wound washed in castor oil.

TEXTS AND DOCUMENTS

LOUIS PASTEUR'S CREDO OF SCIENCE:

His Address When He Was Inducted into the French Academy[1]

TRANSLATED BY ELI MOSCHCOWITZ

Pasteur was hard at work when he learned that an election to the French Academy was soon to take place. Contrary to the tradition he made little attempt to solicit his election. He prepared his speech with care and he became especially interested in the life of his predecessor, M. Littré.[2]

Pasteur chose two of his colleagues as his sponsors, J. B. Dumas and D. Nisard to whom he read his speech before its delivery. According to Vallery-Radot:[3] "Dumas received Pasteur in a little private study adjoining the fine drawing-room where he was accustomed to dispense an elegant hospitality. Pasteur drew a stool up to a table and began to read, but in a shy and hurried manner, without even raising his eyes towards Dumas who listened, enthroned in his armchair, with an occasional murmur of approbation." Nisard, a professor of literature, also approved of Pasteur's address, especially the exordium. The permanent secretary,

[1] The translation was made from an edition published in 1882 by Firmin-Didot et Cie., Paris. The Address can also be found in the *Oeuvres de Pasteur*, réunies par Pasteur Valley-Radot, T. VII, Paris, 1939, pp. 326-339.

[2] Littré, Maximilien Paul Emile, born in Paris in 1801, died in 1861. He studied medicine and, at the same time, he learned Sanskrit, Arabic, Greek and the principal Romance tongues. In 1830 he fought as a republican on the barricades in Paris. He began writing articles on science for *Le National*, translated Hippocrates (1861), Strauss' "Life of Jesus" and the works of Pliny the Elder. He became an ardent disciple of Auguste Comte in 1840 and expounded the positivist philosophy in numerous publications. Between these labors he published a "History of French Literature" and a "History of the French Language." In 1863 he published the first four volumes of his remarkable "Dictionary of the French Language." A supplement appeared in 1877. He also wrote much of the "Dictionary of Medicine and Surgery" (1877) and many articles for the volume entitled "Medicine and Physicians." The war of 1870 affected him deeply. In 1871 he was elected to the National Assembly. In 1875 he was made life senator. In 1871 he was elected a member of the French Academy, to succeed Villemain.

"Few men in the 19th century have had the modesty, the earnestness and the many sided erudition of Littré and still fewer have succeeded in preserving to extreme age, in spite of the most exhausting labors, an interest as fresh and unwearied as his in all that has to do with with the intellectual life." (A. R. Marsh)

[3] *The Life of Pasteur*, London, 1911, Vol. II, p. 122.

Camille Doucet, wrote to Pasteur, " Dear and honored colleague: Allow me to suggest to you a modification of your first sentence: Your modesty is excessive."

Pasteur was received into the Academy on the night of April 27, 1882. The Institute was crowded with Academicians, their wives, daughters and sisters; " great ladies interested in coming candidates, widows of deceased Academicians, laureates of various Academy prizes " and many lights of the literary world. This meeting was deemed especially noteworthy not only because Pasteur was being honored, but also because the renowned Ernest Renan, who had succeeded Claude Bernard, was assigned to welcome Pasteur. Pasteur, " looking paler than usual," was " dressed in the customary green embroidered coat of an Academician, wearing across his breast the Grand Cordon of the Legion of Honor." [4] He addressed the assembly in a clear but serious voice:

Gentlemen; at this moment in which I appear before this illustrious assemblage, I feel again the emotion which took possession of me the day on which I applied for your votes. The feeling of my shortcomings overcomes me anew, and I should be embarrassed at finding myself in this position, were it not for the necessity of attributing to science itself the honor, impersonal, as it were, with which you have overwhelmed me.

Science gives birth to wonders every day. You have desired to bear witness once again to the deep impression which the world, ways of life, literature—all in their turn—receive from these many discoveries. If you have deigned to consider me, the nature of my work must have spoken in my behalf. In some ways it concerns the manifestations of life.

In demonstrating that, up to the present, life has never been revealed to man as a product of the forces which rule matter, I have been able to serve the spiritualistic doctrine, much neglected elsewhere, but certain at least to find a glorious refuge in your ranks.

Perhaps therefore, you have thanked me for having brought into this difficult subject concerning the origin of infinitely small things an experimental force which has succeeded in exhausting contradiction. Let us nevertheless attribute its merit to the strict use of the rules of the method which has been our heritage from the great experimentalists, Galileo, Pascal, Newton and their emulators, of the past two centuries; an admirable and sovereign method, which is constantly guided and controlled by observation and experiment free from all metaphysical prejudices, like the

[4] *Ibid.*, p. 124.

reason which carries them out—a method so prolific that superior minds, dazzled by the conquests to which the human mind is indebted, have thought that it could solve all problems. The venerated man of whom I am going to speak shared that illusion.

I have so much to praise and from so many angles in this beautiful life of M. Littré, that you will pardon my sincerity if I begin his eulogy by disagreeing with his philosophic opinions.

Emile Littré was 11 years old when his father, a tax collector, received a modest promotion which kept him in Paris. Thereupon he made his son attend the courses of the Lycée Louis-le-Grand where M. Littré promptly became the head of his class, though he had rivals of whom several achieved fame.

M. Littré liked to attribute to his father most of his successes. The latter was one of those officials of whom our vast government machinery offers more than one example; one of those who, far above the rank they occupy, have not been able, through unfortunate circumstances, "to fulfill themselves." Frequently, through a compensation of destiny, these unknown men forge a glorious life for their sons.

Hardly done with his office work, M. Littré's father became the untiring tutor of his son. In order to help him, he learned Greek and later he even studied Sanskrit. He had impressed all who came in contact with him so vividly that M. Barthélemy Saint-Hilaire,[5] a friend of his children, dedicated to him the "Politics" of Aristotle. Concerning M. Littré's father, his character, his patriotism, his philological aptitudes, the terms of this dedication give an impression that the father's soul had alone fashioned that of the son. That would be an error. M. Littré was perhaps even more like his mother. A woman without culture, she had great moral courage, a deep sense of justice and was ardently in favor of the principles and generous ideas born of the revolution. "She was a Roman" said Sainte-Beuve. Proud of her son, ambitious for him, she maintained proudly in him sentiments of respect and fidelity to republican institutions.

These are the surroundings in which M. Littré grew up and which had a great influence upon his character which by nature was docile, kind and grateful.

Upon leaving the Lycée and through the good offices of the headmaster,

[5] Barthélemy Saint-Hilaire, born 1805, died 1895, was a French scholar and journalist. He was editor of the *National* and other liberal journals. He became professor of Greek and Latin philosophy and translated the works of Aristotle. He was a member of the National Assembly and Secretary to President Thiers.

M. Littré became the secretary of Count Daru [6] who was just finishing his great "History of the Venetian Republic." The young secretary became in time the friend and the habitué of a home where his sweetness, his love of work and his already considerable erudition made him welcome; for, in addition to Latin and Greek, he knew English, German and Italian. He even indulged in writing verse in these various languages.

One day Daru wrote to Littré's father—"Your son is worthy of something better than his work with me. Give him a career, whatever it may be, he will succeed in it. Moreover, you can always count on me to help."

M. Littré decided to study medicine. At the age of 26 he was finishing his hospital internship and was ready to take the doctor's examination when his father died. This was a hard blow to the impoverished family. How would it be possible to pay for the examinations and the initial expense required for the installation of a doctor's office?

Dr. Rayer had for some time noticed this silent, ardent student in his clinic at La Charité; he sensed the young interne's difficulties and made him offers of help that the publisher Hachette, a college mate of Littré's, duplicated.

"I did not," said Littré, "have the courage to encumber the present in order that I might become a physician." He resisted every pressure brought to bear upon him and courageously began to make his own and his mother's living by giving lessons in foreign languages and even in mathematics, for, before entering the service of Count Daru, he conceived a passing notion to take the examinations for entrance into the Polytechnic School.

"In the beginning of 1831, the North wind had struck," I am quoting M. Littré himself, "I found myself very impoverished and I was seeking work. Dr. Campaignac, one of my co-students who was physician to Armand Carrel,[7] recommended me to the latter. Carrel asked me to assist him in editing the *National*." With the modest role of translator of German and English newspapers, M. Littré kept this job for more than three years, without doing anything to advance his position. "I was

[6] Daru, Pierre-Antoine Noel Bruno, Count, born 1767, died 1829, statesman and author. In the reign of terror he was confined to prison where he translated the odes of Horace in verse. He accompanied Napoleon in his campaigns in Prussia and Austria. He became Chief Minister of State in 1811. In 1815 he was elected President of the French Academy.

[7] Carrel, Nicolas Armand, born 1800, died in a duel in 1836. He was a writer and leader of the Republican party. He wrote an admirable "History of the Counter Revolution in England." He became editor of the influential liberal paper *Le National*. He was an eloquent and popular writer.

happy," he said, " I had free mornings which I could devote to the hospital and I passed my evenings in various other studies."

Luck sometimes advances those whom modesty retards. The fine discourse on natural philosophy by William Herschel,[8] son of the illustrious astronomer of that name, had just appeared. In *Le National* of February 14, 1835, M. Littré wrote an analysis of this article showing such knowledge and such deep insight that M. Carrel, then a political prisoner at Sainte-Pélagie, wrote a letter to Littré's mother full of affection and praise of her son. " It is you, Madam," he said, " whom I want to compliment upon the admirable piece of work that Emile gave us this morning in *Le National*. . . . Tell him I know nobody in Paris who is capable of writing an article such as his on Herschel, and I blush to have been editor-in-chief of a newspaper on which he was satisfied with a position beneath his knowledge and talents."

From that moment Carrel desired to make Littré a political editor. But Littré, too modest to accept this job, was at the same time too timid to occupy it.

Sainte-Beuve in his " Monday Talks " has gently drawn the character of the man who does not know how to make himself known or take the initiative. He says: " The sincerely modest and humble man can be very clever on certain points, very courageously resistant on others, but there is reason to believe that he is incapable of a certain initiative, of a spirit of enterprise and persistence and of a complete and free release of all his faculties, and it is because he instinctively feels himself incapable of such a role and for such a responsibility that he fears and blushes at the thought of revealing himself, and is so distressed if he is advanced too much." M. Littré recognized himself in this portrait and applied it sincerely to himself. " If I did not see," he said charmingly, " that this description of Sainte-Beuve is altogether general and includes a class of minds, I would consider that he particularly referred to myself."

Merit such as his is not so common that all the modesty in the world

[8] Herschel, Sir John Frederick William, born in 1792 and died in 1871. He was a son of Sir Frederick William Herschel, the great astronomer. He graduated from Cambridge in 1813, and in the same year, following the publication of a mathematical paper, he was elected a fellow of the Royal Society at the age of 21. Five years later he was made a baronet. He became President of the Astronomical Society and finally permanent Master of the Mint. Herschel devoted part of his life to a review of the nebulae discovered by his father and in this process catalogued between 2000 and 3000 double stars. In addition he discovered 2000 new nebulae. He published altogether 181 articles on various astronomical topics. He performed a great service to photography by the discovery of a process for making the impressions permanent.

can keep it from being revealed and attracting attention. In the year 1831, the publisher, Jean-Baptiste Baillière, associated with all the physicians of that period, had proposed to M. Littré to join Dr. Andral in undertaking a new translation and a new edition of Hippocrates. Andral,[9] busy with other studies, could not participate in this great work and, in 1834, Littré remained in sole charge. The special information and various aptitudes necessary to finish this assiduous task, unbelievable as it may appear, were enough to frighten and deter anybody but M. Littré, said one of his biographers.

The first volume appeared in 1839. No sooner was it published than M. Littré was elected member of the Academy of Inscriptions. Our colleague loved to recall this first and great success. From that period, while doing justice to all the requirements of the translation of Hippocrates, his reputation grew through a constant accumulation of the most diverse work. Prepared by a work in a single field, he was able to become expert in all directions of thought.

In 1844, he replaced M. Fauriel [10] on the Committee of the Literary History of France, in which he made important contributions on the physicians of the Middle Ages, on glossaries, on romances or poems of adventure and other branches of the poetry of the "trouvères." [11] Editor of *Le National*, of the *Dictionnaire de Médecine*, collaborator of the *Revue des Deux-Mondes*, of the *Journal des Débats*, of the *Journal des Savants* and of the *Revue Germanique*, M. Littré became a leader and displayed in these diverse publications his treasures of erudition on all kinds of subjects, medical, historical, philological, linguistic and upon the literature of the Middle Ages. He even added some efforts at poetry.

The most curious of these was a translation of a song of the "Iliad"

[9] Andral, Gabriel A., born in 1797 in Paris, died in 1876; at the age of 43 became the successor of Broussais as Professor of General Pathology and Therapy in the University of Paris, a position he held for 27 years. He was distinguished as a brilliant lecturer and for his publications "Clinique Médicale" which appeared in five volumes between the years 1823 and 1827 and which were subsequently translated into many languages. In these volumes he reveals himself as the follower of Laennec and as one of the first clinicians in the modern sense. The clinics give the symptomatic and objective data of disease, which are later correlated with the post-mortem findings, and end with a rational therapy. He was one of the first to react against the promiscuous blood letting of his predecessor, Broussais.

[10] Fauriel, Claude Charles, born 1772, died 1844, was Professor of Foreign Literature in the University of Paris. Among his principal works are "A History of Southern Gaul," "History of Provençal Literature" and "Popular Songs of Modern Greece."

[11] Trouvères are the bards of Northern France. Troubadours are the bards of Southern France.

in French verse of the 13th Century. It was for him an exercise in application of his vast investigations of the French language and its origins. As has been said, he made himself a trouvère better to judge the *troubadours*. He also published a highly esteemed translation of Pliny the Elder in the " Collection Nisard."

If I do not possess the necessary qualifications to speak of the greater part of the works I have just mentioned, I console myself with the judgment that is to be pronounced upon them by the eminent man (Nisard) through whom I have the honor of being received in your illustrious company. Confrère of M. Littré in the Académie des Belles-Lettres, he is most competent judge of the works which have honored the life of this indefatigable worker.

Before his death M. Littré said—" What have I not turned over in my mind? If my old age had been robust, if I had not been weighed down by illness, I would have, with some co-workers, put my hand to writing a universal history for which I had the complete plan."

In the ardor which led him to search for clarity in everything he remained true to one field of study. That was medicine. We are in debt to him for some scientific dissertations on the heart, on cholera, on yellow fever, on the plague, on the great epidemics. . . .

What great ideas could we not glean from those pages! He did not bother to write with a brilliant style. But while aiming at clarity his language is often eloquent. In relating the incidence of horrible epidemics, he says: " these are big and strange phenomena. Now and then, when towns are calm and happy, of a sudden the ground quakes and buildings fall on the heads of the inhabitants; so it happens that a fatal influence arises suddenly from an unknown depth and with an indefatigable breath lays low populations, like seeds in their furrows. The causes are unknown, the effects terrible, and the aftermath immense. Nothing frightens man more, nothing creates such alarm in the hearts of nations; nothing creates among the common people blacker suspicions. It seems as though, when mortality has taken this course, its ravages know no end and that the fire, once lit, will never die out, except by lack of fuel. . . ."

This quotation shows also that M. Littré was attracted by the great questions of medical etiology.

He says, " I have always reserved a place for the study of disease, and things associated with it. I have never allowed my other work and my other tastes to restrict me in this direction. Although I have studied medicine without ever having practised it, I would not exchange this

branch of knowledge which I have long ago mastered through steady work for anything whatsoever."

This quotation deserves to be followed; "I have just said that I have never practised medicine. This demands a correction. For thirty years I have realized what Horace called 'Hoc erat in votis'—a small garden in a small village. When I went there, how was it known that I was interested in medicine? I don't know. Nevertheless when my peasant neighbors fell ill, they asked me for help. Practising for nothing, I would have had a large clientele; but I rigidly limited my sphere of action and prudently and devotedly visiting my patients several times a day, I rendered definite service; later on Dr. Daremberg who had just settled there and who, like myself, loved Hippocrates and his ancient genius, became associated with me and we often regretted later not having thought of publishing the clinical observations of our little village. Now old age has released me from this benevolent service, but I have acquired the friendship and gratitude of my neighbors and to quote the old man of La Fontaine, 'That in itself is a fruit which tastes good today.'"

Would Horace have written his "Hoc erat in votis," if his country house had resembled that of Littré in Mesnil? There you do not find a brook of running water, nor the scent of woods, nor any of the ease of which Horace had dreamed. Only the simplest parsonage of the poorest of villages can give you a notion of that house, where everything reflects a life of solitude, of labor and of disinterestedness. M. Littré practised austerity. Pious respect has left everything in its place, as if he were to come back any moment and would be able to find open books and scattered notes on his desk. Here is the little table where his wife and daughter worked close by, and above this table appears a visible proof of M. Littré's profound tolerance,—a picture of Christ.

It was in this retreat that M. Littré composed the greater part of his dictionary. With what superhuman patience and courage, so to speak, he assembled the material for a work which has rightfully been acclaimed a national monument!

"I was the first person," says M. Littré, "to desire to submit the dictionary entirely to history." Breaking the precedent of citing arbitrary phrases as examples, he obligated himself to cite for each word sentences taken from the works of the best writers, not only those of classic French, but even from texts of old French from the Eleventh Century to the end of the Sixteenth—paying attention to all the meanings through which the word had passed, omitting neither archaisms, neologisms, nor grammatical

infractions; and alert to indirect or odd connotations and preferring always the citations which have the greatest elegance of form and of thought, or those that are interesting because of the history of ideas and customs. As may well be believed M. Littré, after having labored for years to assemble all those quotations, spent several more years in retouching, classifying, adding and correcting unceasingly; with the honesty which he displayed in everything, he said, " How many false paths have I travelled! How many abortive labors have I undertaken! I would return to the already trodden paths, I would lose my way in a labyrinth of thought, always on the point of discouragement." One day speaking to M. Beaujean, his wise and devoted collaborator, " Oh! my friend," he exclaimed, " never make a dictionary."

It is difficult, as a matter of fact, to appreciate what an extensive labor such a work represents. He himself figured that if the dictionary without its supplement were set up in one column, that column would measure 37 kilometers, 525 meters and 28 centimeters, about the distance from Paris to Meaux.

La Fontaine, whom he liked to quote, had given him as his motto: " Patience and time." In a life entirely absorbed in the practise of this motto, his solitude was, nevertheless, open to interruption; if by chance he was disturbed by some visitor, he did not care, in order to escape a bore, to lose the opportunity to render a service.

On one occasion while he was deep in his work, the widow of Auguste Comte arrived and begged him to write the biography of her husband. M. Littré objected because his dictionary took up all his time, but he promised to devote himself unreservedly to the task as soon as he had finished the dictionary. She stubbornly insisted, making an appeal to the gratitude he owed to the founder of positivist philosophy. Finally M. Littré consented. With a surprising resignation he modified the order of his work on the dictionary, shortened his hours of rest, and found the time to compose a biography of Auguste Comte, called " Auguste Comte and the Positivist Philosophy," a book of no less than 600 pages.

In Mesnil he was the consulting physician to the entire village. As he would remain awake up to three o'clock in the morning, the light of his lamp shone from afar during the night like a beacon which reassured the sick. One knew that, at the first call, M. Littré would cease his work and give help wherever it was needed.

Would you believe it possible that this man whose astonishing and charitable life I have just sketched was misjudged to the point of calumny?

However, such is the truth. His opinions on philosophy having been the cause of this, this is the moment for me to examine them. I have no other object than to maintain my own liberty of thought.

At about the age of forty, a crisis came in the beliefs of M. Littré. He had just read Auguste Comte's work, " System of Positivist Philosophy." This made an extraordinary impression upon him.

" This book," he said, " subjugated me. There developed in my mind a battle between my old and my new opinions. The latter triumphed. I became from that moment a disciple of positivist philosophy and I have remained so . . . It is more than twenty years that I have been a follower of that philosophy; the confidence with which it inspires one has never been disavowed . . . Interested in most varied subjects—history, language, physiology, medicine, erudition, I have always used this philosophy as a sort of instrument to trace the outlines, the origin, the result of every question . . . This philosophy is all satisfying, it never deceives me and always enlightens me . . ."

The fundamental principle of Auguste Comte is the attempt to discard all metaphysical research to first and last causes, to base all ideas and all theories on facts and not to attribute certainty to anything but to experience. This system includes a classification of all sciences—and a supposed law of history which is contained in the following predication: the concepts of the human mind pass successively through three stages: the theological stage, the metaphysical stage, and the scientific or positive stage.

M. Littré never ceased praising this doctrine and its author. For him Auguste Comte was one of those men who deserved to occupy a great place in history, and this " positivist philosophy was one of these scarcely secular works which change our outlook." Questioned upon what he considered most useful in his industrious life, there is no doubt that his thoughts drifted with satisfaction to his role as a sincere and persevering apostle of positivism.

It is not rare to see the most learned men at times lose the true estimate of their merit. That is why it is my duty to submit my personal judgment of the value of Auguste Comte's work. I confess that I have arrived at quite a different opinion from that of M. Littré. The reasons for this divergence appear to me to be the result of the very nature of the work which occupied his life and that which is the whole object of mine.

The labors of M. Littré were devoted to research work on history, linguistics, scientific and literary erudition. The material of all such studies consists entirely in facts belonging to the past, facts to which one can

neither add nor subtract. It requires a method of observation which only too often does not present precise evidence. The characteristic attribute of experimentation, on the other hand, is that it does not admit anything but precise evidence.

The experimenter, the man who tries constantly to conquer nature, finds himself in a struggle with facts which have not yet manifested themselves and do not exist for the most part except in their potentiality to become laws of nature. The unknown in what is possible and not in what has been—this is his domain, and to explore it he has the aid of this marvelous experimental method for which one can truthfully say, that while it is not sufficient for everything, it rarely deceives, and then only those who use this method badly. It eliminates certain facts, raises others, interrogates nature, forces it to reply and never ceases until the mind is fully satisfied. The charm of our studies, the enchantment of science, so to speak, consists in that we can give justification to our principles and proof to our discoveries, everywhere and always.

The mistake of both Auguste Comte and of M. Littré was that they confused this method of experimentation with the restricted method of observation. Both of them, strangers to experimentation, give to the word "experience" the acceptance which general conversation attributes to it, the domain where it has by no means the same meaning as in scientific language. In the first place, experience is nothing but simple observation of things and the concluding induction, more or less justified, of that which has been and that which might be. The true experimental method seeks to attain unanswerable proof.

The conditions and the daily output of a man of science affect his mind moreover in such a way that he attributes the notion of progress only to the notion of invention. To judge the value of positivism, my first thought has been to see if it possessed invention. I have not found it. One really cannot attribute the idea of invention to the so-called law of the three states of the human mind, any more than to the hierarchical classification of the sciences which are but approximations without much value. Positivism, since it does not offer me any new ideas, leaves me reserved and distrustful.

M. Littré's faith in positivism came to him because of the great peace it brought him concerning the great metaphysical questions. Negation as well as doubt obsessed him. Auguste Comte extricated him from both of those states by a dogmatism which suppressed all metaphysics.

Facing this doctrine M. Littré said to himself: "You need not worry

about the origin nor the end of things, nor about God, nor of the soul, nor of theology, nor of metaphysics; follow your bent as a 'restless or charmed' seeker towards research; avoid the absolute; love nothing but the relative." What peace for this ardent brain so ambitious to traverse all the field of learning!

Nevertheless, we were mistaken concerning this peace of mind and we were satisfied with false appearances in regarding M. Littré a resolute and tranquil atheist. He was not indifferent to other people's religious beliefs. "I have realized too greatly," he said, "the suffering and difficulties of human life to desire to take away from anyone convictions which sustain him in his various trials." He no more denies the existence of God than the immortality of the soul; he à priori releases himself from this belief since he proclaims the impossibility of proving its existence scientifically.

As far as I am concerned, who believe that the words, progress and invention, are synonymous, I wonder from what new discovery, philosophic or scientific, one can extract these high preoccupations from the human soul. They appear to me of eternal essence, because the mystery which surrounds the universe and of which they are an emanation, is itself eternal by nature.

It is said that the great English physicist Faraday, in his lectures at the Royal Institute of London, never pronounced the name of God, despite the fact that he was profoundly religious. One day the word escaped him and suddenly a movement of sympathetic approval was felt. Faraday, sensing this, interrupted his lecture with these words: "I have just surprised you when I pronounced the name of God. If that has not yet happened before, it is because in these lectures I represent only experimental science. But the idea and reverence of God come to my spirit through trains of thought as certain as those which lead us to truths of physical order."

Experimental science is fundamentally positivist in the sense that in its conceptions it never interferes with the consideration of the substance of things, with the origin of the world and its destiny. Science has no need for that. Science knows that it has nothing to learn from metaphysical speculation. Nevertheless it does not set aside hypothesis. On the contrary, nobody has employed hypothesis more than the experimenter; but it is only as a guide and spur to research conditioned by precise controls. He disdains and rejects his preconceived ideas from the moment that experimentation proves to him that they do not correspond to objective realities.

M. Littré and Auguste Comte believed and made superficial minds believe that their system depended on the same scientific principles of

which Archimedes, Galileo, Pascal, Newton and Lavoisier are the real founders. Thence arose the illusion still favored by all who accept without questioning the scientific ideas of M. Littré. To what errors can this mistaken identity of the two methods not provoke us!

Arago [12] had said of Comte: "He has no mathematical standing . . . either large or small." "It is true," replies M. Littré, "M. Comte has made no geometric discoveries, but he has made sociological ones." Alas, here is an example of a sociological discovery! On the tenth of November 1850, M. Littré published in *Le National* an article entitled "Occidental Peace," an article to prove that sociology was a science. "There are two methods," he said, "of proving the truth of a doctrine. Sometimes it is by direct reasoning through work and study; sometimes it is by the forecast derived from the doctrine which convinces and strikes all minds; to know is to foresee."

So it happened that, as we were enjoying in 1850 the joys of peace dating from 1815, M. Littré exclaims: "But peace was foreseen for the past 25 years through sociology." Unfortunately, the article continues in these terms: "Even today sociology predicts peace for the total course of our transit, at the end of which a republican confederation will have united the west and put an end to armed conflicts. . . ." M. Littré was soon disillusioned. When in 1878 he reprinted his article of 1850, he added to it observations in which with his usual candor, he expresses the chagrin from which he suffered because of his former naive confidence. "These unfortunate pages," says he, "hurt me; I would love to be able to erase them. They are a constant contradiction of the events which have actually developed. . . . In my youthful enthusiasm I had hardly written that there would be no more military defeats in Europe and that in the future these would be replaced by political defeats, there arose the military defeat of Russia in the Crimea, the Austrian defeat in Italy, the Austrian defeat in Germany, the defeat of France at Sedan and at Metz, and very recently the Turkish defeat in the Balkans."

The work of M. Littré published in 1879, under the title "Conservation, Revolution and Positivism," is filled with errors that the positivist doctrine

[12] Arago, Dominique François, born 1786, died 1853. He advocated the undulatory theory of light and made several discoveries in the science of electromagnetism. He became Director of the Observatory of Paris and permanent Secretary of the Academy of Science. He had a remarkable faculty for popularizing science both in his writings and his lectures. In 1831 he became a leftist member of the Chamber of Deputies. He was a Minister of War and Marine for several months. He opposed the election of Louis Napoléon and refused the oath of allegiance.

caused him to commit in politics and in sociology. Why should we be surprised? Politics and sociology are sciences which are difficult to prove. The number of factors involved in the solution of the problems which they stimulate is too great. The field of the unexpected is too large where human passions intervene.

Positivism does not sin only by a mistaken method. In the web of its own apparently very close reasoning there are revealed considerable gaps, and I am surprised that M. Littré's sagacity did not make him see the light.

On many occasions he defines positivism viewed from a practical standpoint: "I call positivism everything that occurs in society in order that it may be organized according to the positivist, that is to say, scientific conception of the world."

I am ready to accept this definition on the condition that a rigorous application of it be made; but the great and visible gap of this system consists in the fact that, in the positivist concept of the world, he does not take into account the most important of positivistic ideas, that is, the infinite.

Beyond this starry vault, what is there? Other starry skies—So be it! And what comes after these? The human mind pushed by an invincible force will never cease to wonder; what is there beyond? Does the mind wish to stop, whether in respect to time, or in respect to space? At the point where it stops is there nothing but a finite grandeur only larger than all those which have preceded it? No sooner does it begin to envision it than the implacable question returns and always without the mind's being able to silence the cry of its curiosity. It does not help to reply: beyond there are spaces, times or grandeurs without limit. Nobody understands these words. He who affirms the existence of the infinite,—and nobody can escape this thought—acquires in this affirmation more of the supernatural than is to be found in all the miracles of all religions; for the idea of the infinite possesses this double character; that of forcing itself upon us and that of being incomprehensible. When this idea takes possession of the understanding, there is nothing to do but bow in humility. Also, at such a moment of poignant anguish one must ask mercy of one's own reason; all the springs of intellectual life threaten to slacken; one feels near to being seized by Pascal's sublime madness.[18] Positivism

[18] Pasteur probably refers to the fact that Pascal spent his last years broken in health and racked with pain and, to modern ideas, in the practise of an extravagant asceticism. Thus he disliked to see a mother caress her children and would not permit the beauty of any woman to be spoken of in his presence.

gratuitously discards this positive and primordial idea, as well as all its consequences in the life of societies.

I see everywhere the inevitable expression of the idea of the infinite in the world. Through it the supernatural is deep in all hearts. The idea of God is another form of the idea of the infinite. As long as the mystery of the infinite weighs upon human thought, there will be temples built for the worship of the infinite, whether the God be called Brahma, Allah, Jehovah or Jesus. And on the thresholds of these temples you will see human beings prostrate, kneeling, overwhelmed by the thought of the infinite. Metaphysics does nothing but translate within us the dominating notion of the infinite. Is not the conception of the idea the faculty reflected by the infinite, which, in the presence of beauty, carries us on to imagine even greater beauty? Science and the passion for understanding, are they anything other than the effect of the impetus for knowledge which inculcates in our souls the mystery of the universe? Where are the true sources of human dignity, of liberty, of modern democracy, if not in the idea of the infinite before which all men are equal?

"There should be a spiritual tie within humanity," says M. Littré, "without which there would be in society nothing but isolated families and hordes but not real society." This spiritual tie which he placed into a kind of inferior religion of humanity could not exist anywhere other than in the higher idea of the infinite, because this spiritual tie must be associated with the mystery of the world. The religion of humanity is one of those ideas whose superficial and suspect evidence have made an eminent psychologist say: "I have for a long time been thinking that he who has nothing but clear ideas must indeed be a fool." He adds: "The most precious ideas that are concealed in the human mind are in the background of the scene and in semidarkness, and it is in the light of these confused ideas whose associations escape us, that the clear ideas circulate in order to expand, develop and to rise to greater heights. If we were cut off from these back-stage ideas, the exact sciences would lose thereby that grandeur which they achieve from their secret ties with other infinite truths which we may surmise."

The Greeks understood the mysterious power of the hidden side of things. It is they who have bequeathed to us one of the most beautiful words in our language—the word enthusiasm—Ἐν Θεός—an Inner God.

The grandeur of human actions is measured by the inspiration which gives birth to them. Happy is he who carries within himself a God, an ideal of beauty, and who obeys it; and ideal of art, an ideal of science,

an ideal of patriotism, an ideal of the virtues as contained in the Gospel. These are the living sources of great thoughts and great acts. All are lighted by reflection from the infinite. M. Littré had his own God within him. The ideal which filled his soul was his passion for work and his love for humanity.

I often imagine seeing him, seated near his wife, as in a picture of the early days of Christianity; he gazing upon the world, full of compassion for those who suffer; she, a devout Catholic, eyes raised to heaven; he inspired by all earthly virtues; she, by all divine grandeur; uniting by one and the same spirit as by one single heart the twofold holiness which forms the halo of l'Homme-Dieu, the one which derives from devotion to that which is human, the other which emanates from ardent love of the divine; —she a saint in the canonic acceptance, he, a lay saint.

This last word is not mine; I gathered it from the lips of all those who knew him.

NOTES AND COMMENTS

THE STAG OF RICHMOND PARK:

A Note on John Hunter's Most Famous Animal Experiment

LLOYD G. STEVENSON

In July, 1785, so the well-known story goes, John Hunter caused a stag to be caught and tied in Richmond Park. He then ligated one of its external carotid arteries and noted that the half-grown antler soon became cold to the touch. About a week later he was surprised to find that the antler had regained its warmth and was growing. The stag was thereupon killed and Hunter's dissection showed that the artery was well secured, while collateral circuits had enlarged and thus restored the blood supply to the growing antler. "Oho" said Hunter (in Victor Robinson's version of the story [1]), "I see that under the stimulus of necessity the smaller arterial channels quickly increase in size to do the work of the larger."

In December of the same year Hunter performed for the first time the operation for popliteal aneurism which has become famous as the Hunterian, or Desault-Hunter, operation.[2] On this first occasion he used four ligatures, two left untied, and ligated both artery and vein; it was not until his fourth operative case that he used the method which now bears his name.[3] The first operation, however, had the essential new feature that he tied the artery higher up than formerly, in a region where he

[1] *Pathfinders in Medicine*, Med. Rev. of Rev., New York, 1912, p. 180; *The Story of Medicine*, A. and C. Boni, New York, 1931, p. 365. The passage is quoted by Richard A. Leonardo, *History of Surgery*, Froben Press, New York, 1943, p. 226.

[2] The vexed question of whether the credit for introducing this operation belongs to Hunter, Anel, Desault or some other claimant will not be discussed in this paper. *Cf.* Léon Le Fort, *Dictionnaire encyclopédique des sciences médicales*, Paris, 1866, t. 4, p. 606 ff.

[3] One ligature only was used and Home thought only the artery was included. ("An account of Mr. Hunter's method of performing the operation for the cure of the popliteal aneurism," *Transactions of a society for the improvement of medical and chirurgical knowledge*, London, 1793, I, p. 138. Reprinted in Palmer's edition of Hunter's *Works*, London, 1835, III, pp. 594-612. *Cf.* p. 604). Wormald, who did an autopsy of this case fifty years after the operation, found the vein pervious but "the nervus saphenus had been divided or included in the ligature. This was evident from its ganglionic state directly under the cicatrix." Thomas Wormald, *Hunterian oration* (1857) London, 1858, p. 15.

hoped to find it healthy. That the concept leading to this innovation was at least in part the result of his observations when he tied the external carotid of the stag is the link which is assumed to connect the two parts of the story. The experiment on the stag has even been called " the crucial experiment." [4]

Both Hunter and Sir Everard Home described an animal experiment which preceded the first surgical case, but it was not the experiment of the stag. It was in fact quite a different matter, which will be noticed presently, and was in no way concerned with ligation. The curious fact is that the story of the stag of Richmond Park is not to be found in Hunter's published works,[5] nor is it mentioned by Home, who gave the original report of Hunter's method in the treatment of aneurism.[6] Where does the Richmond Park story come from? Assuming that Hunter performed this experimental ligation, did he himself consider it a necessary preliminary to his new operation or is this merely the inference of historians? What was his object in performing the experiment, and what did he learn from it? Was it really of great importance in shaping his thought?

In 1877 Sir James Paget [7] tried to trace the process by which Hunter arrived at the invention of his operation. He noted that the chief objection to ligature after the older method (which Hunter himself had long employed) was the belief that the circulation could not be carried on by anastomosing vessels.[8] In addition to the references given by Paget it may be noted that Percival Pott considered the artery to be " distempered some way above the dilatation " and thought " the want of collateral branches of sufficient size to carry on the circulation is another very powerful impediment " to the success of the operation.[9] It is well known that Pott believed amputation the only cure.

Wrote Benjamin Bell: " Much harm, I am convinced, has been done

[4] Sir William MacCormac, *Hunterian oration* (1899) London, 1899, p. 23.

[5] MacCormac, *loc. cit.*, writes: " He [Hunter] tells us that in July 1785 he had a buck thrown, etc.," but no reference is given and the expression seems to be inexact.

[6] " An account of Mr. Hunter's method in performing the operation for the popliteal aneurism. Communicated in a letter to Dr. Simmons by Mr. Everard Home, surgeon," *London Medical Journal*, 1786, VII, pp. 391-406. Reprinted in *Medical Classics*, IV, Williams and Wilkins, Baltimore, 1939/40, pp. 449-457. Home's second paper on the subject (1793) has been mentioned above (n. 3).

[7] Sir James Paget, *Hunterian oration* (1877), London, 1877, pp. 56-59.

[8] Bromfield, *Chirurgical observations and cases*, 1773, I, p. 205; and Hunter's *Lectures*, in the *Works*, I, p. 547 (cited by Paget, *op. cit.*, p. 57).

[9] *The chirurgical works of Percival Pott*, London, 1790, I, pp. 398-399 (Pott died in 1788).

by passing the ligature so far distant from the orifice as is commonly practised; for the risk of losing the benefit of anastomosing branches will be always increased in proportion to the extent of artery included between the ligatures." [10]

Now, as Paget remarked, Hunter had seen in a patient with aneurism both the femoral and the profunda obliterated, and yet the limb supplied with blood; [11] and he had often, in injected limbs, dissected the anastomosing branches connecting the upper and lower parts of the arterial trunk. Having experienced failures with the older ligation method he said: "I believe we should not be anxious about the collateral branches; I have lost several advantages from this mistaken delicacy. I believe the circulation will always go on after the femoral artery is secured by ligature." [12]

Without reference, then, to the Richmond Park experiment, Paget was able to account for Hunter's views on the capabilities of collateral circulation. Hunter's studies of the elasticity of arteries may also have contributed to this opinion. (Certainly these studies showed the possibility of diminution in the size of the sac, once relieved of the assault of arterial pressure.[13] Surgical experience here came to the support of experimental evidence.) His work on the "absorbents" seems also to have influenced his thinking on aneurism.[14]

Since the want of collateral circulation was rejected as a cause of failure, why did the old ligation method so seldom succeed? Hunter fixed on the other reason mentioned by Pott: the artery in the region of the aneurism was diseased. To demonstrate that the weakness of the arterial wall depended on disease, rather than on mechanical injury, he removed the outer layers for an inch in length from the carotid of a dog, and found, three weeks later, no dilation but rather a satisfactory union of surrounding parts, plastering up and supporting the region of weakness.[15] This is the experiment mentioned by both Home and Hunter as preliminary to the first of the new operations. From this experiment and from surgical observations it was concluded that the artery was diseased above the sac

[10] Benjamin Bell, *A system of surgery*, Edinburgh, 1783, I, p. 229.

[11] Home, in *London Medical Journal*, VII, p. 400 (quoted by Paget, *loc. cit.*). See *Medical Classics*, IV, p. 454.

[12] *Works*, I, pp. 550-551 (quoted by Paget, *loc. cit.*).

[13] *Cf.* Henry Power, *Hunterian oration* (1889) London, 1889, pp. 23-25.

[14] Hunter thought the contents of the sac would be absorbed rather than organized (*cf.* Home, in *Medical Classics*, IV, p. 450). Le Fort, *loc. cit.*, points out that Ford was the first to correct this view. It is possible, even probable, that Ford worked in collaboration with Hunter.

[15] *Works*, I, p. 544.

and often ulcerated under the ligature. " The accident of the artery giving way happened several times to him." [16] This suggested tying at a higher level. But what if the whole arterial system was diseased? The same objection was urged against amputation, and Pott's reply was to point to his successful cases with long survival after operation. Hunter's final argument was this: " If the artery . . . cannot be tied above the aneurism in the operation, where can it be tied if the limb be amputated? *Why not tie it up higher in the sound parts, where it is tied in amputation, and preserve the limb?* " [17]

After amputation, of course, there was no limb to be supplied with blood. After ligation, or so it was thought by conservative surgeons, the limb would mortify for lack of blood supply. The problem came around again to the capabilities of the collateral circulation.

In 1879, speaking at a dinner of the Hunterian Society of London, Professor Richard Owen discussed the practice of vivisection, then under attack, defending it for its proved usefulness. As reported in *The British Medical Journal*, Feb. 22, 1879, I, pp. 284-285, he " adduced an instance in John Hunter's physiological labours which bore impressively upon the mooted question." Nearly two columns of quotation follow, Owen recounting in careful detail the story of Hunter's experiment on the stag and relating it directly to the introduction of the new operation. The story is set forth with rhetorical pathos. Two alternatives were open to a patient with a popliteal aneurism prior to Hunter's innovation. Says a hypothetical surgeon, representing " the highest surgical science ": " Will you lose your leg or life? " To which Owen adds: " Although there were no anaesthetics in those days, I am not sure that I could afford much sympathy in the case of the antivivisectionist reduced to this choice, as to this day he might have been had Hunter not cut down and tied the artery of the deer."

If the experiment was as important as Owen supposed, why was it not mentioned by Home or Hunter? Where did Owen get the story? The last paragraph of the article in *The British Medical Journal* is not in quote-marks but we can hardly doubt that the information it contains was supplied by Owen: " The foregoing account of Hunter's operation is founded upon a tradition received by William Clift from his predecessor William Ball, who assisted John Hunter in injecting and making the

[16] Home, in *Medical Classics*, IV, p. 450.
[17] *Works*, I, p. 548.

preparations which illustrate the phenomena of the successive growth and loss of the antlers of deer." [18]

Owen began his career as Assistant Curator of the Hunterian Museum under Clift, whom he afterwards succeeded as Conservator. In 1835 he married Clift's only daughter. For twenty-three years, until Clift's death in 1849, the two men were intimate friends.[19] The story may therefore be presumed to have passed from Hunter to Bell, from Bell to Clift, and from Clift to Owen. Although Owen must have heard the story sometime before 1849, it was not until thirty years later, under the pressure of special circumstances, that he made it public.

I cannot find that the story was set down by any of Hunter's contemporaries. His early biographies do not mention it, nor is it recorded by any Hunterian orator prior to the publication of Owen's speech. Indeed a junior contemporary of Hunter, writing before the publication of the first collected edition of the *Works* in 1835, seems to have known rather less than we do of the history of the operation. " It is to be regretted," wrote Sir David Dundas,[20] " that Mr. Hunter himself did not favour the public with any account of this operation, or of the view he had of the animal oeconomy which suggested it."

It has already been said that the tale is not to be found in Hunter's *Works*. Two volumes of *Essays and Observations*, those of Hunter's posthumous papers which escaped destruction by Sir Everard Home through transcription by Clift, were published in 1861 by Owen. Three pages are devoted to the annual growth and shedding of the antlers of deer,[21] but there is no mention of an experiment in ligating an artery, either in Hunter's text or notes, or in the editorial notes which were supplied by both Clift and Owen.

Despite the prevailing silence on the subject before 1879, there is little reason to doubt that Hunter actually performed the experiment. The sequence of transmission of the traditional story is clear. What about the specimen?

In the *Physiological Series of Comparative Anatomy*, the only preparation specially made to show the anastomosis of arteries is number 940, a dissection of portions of the right and left aortae of a turtle and their

[18] " Ball " is a misprint for " Bell." William Bell was Hunter's first assistant.

[19] *The life of Richard Owen*, by his grandson, the Rev. Richard Owen, M. A., London, 1895, I, pp. 33, 90, 341.

[20] *Hunterian oration* (1818) London, 1818, p. 30.

[21] John Hunter, *Essays and observations on natural history, anatomy, physiology, psychology and geology*, ed. by Richard Owen, 2 vols., London, 1861, II, pp. 136-139.

junction in the abdomen.[22] In the preparations numbered 163 to 187,[23] inclusive, and in number 1408,[24] are exemplified the several stages and circumstances in the development of the antler of the fallow deer (Cervus Dama, *Linn.*).[25] It is disappointing that Owen's descriptions say nothing of ligation and that it is not possible to determine from the accounts which specimen, if any, was prepared from the stag of the well-known story. Interested in the formation of bone, Hunter found in the growth of antlers an excellent opportunity to study it, as did Macewen after him.[26] If he picked up, quite incidentally, a scrap of information which was useful to him in another context, this was probably no more than typical.

An idea closely related to his view of the great potentiality of collateral circulation was certainly in his mind when he was working with deer. Preparation number 168 is thus described in the catalogue of the physiological series: "The outer layer of bone and the periosteal covering of part of the palm, and of one of the antlers of the growing horn, highly injected, and deprived of the earthy material by being steeped in acid, so that the ramifications of the vessels in the substance of the bone are more clearly shown. One of the external vessels of the periosteum derived from branches of the external carotid is also exposed."[27]

To this description Owen has added a passage from Hunter *On the blood* (1794, p. 288), in part as follows: "We find it a common principle in the animal machine, that every part increases in some degree according to the action required. Thus we find muscles increased in size when much exercised; vessels become larger in proportion to the necessity of supply, as for instance in the gravid uterus; the external carotids in the stag, also, when his horns are growing, are much larger than at any other time."[28]

If "every part increases in some degree according to the action required," surely this is true of collateral circuits when the main vessel is tied. Thus we come tantalizingly close to the crucial idea, and in the very context of Hunter's study of deer. But we come no closer. A tradition

[22] *Descriptive and illustrated catalogue of the physiological series of comparative anatomy contained in the museum of the Royal College of Surgeons in London*, compiled by Richard Owen, 5 vols., London, 1833-40, II, no. 940.

[23] *Ibid.*, I, nos. 163-187.

[24] *Ibid.*, III, no. 1408.

[25] Other Hunterian specimens of antlers are included in the *Descriptive catalogue of the osteological series*, London, 1853, and in the *Catalogue of the specimens illustrating the osteology and dentition of vertebrated animals*, London, 1884, Pt. II.

[26] William Macewen, *The growth and shedding of the antler of deer*, Glasgow, 1920.

[27] *Catalogue of the physiological series*, I, no. 168.

[28] *Ibid.*

which seems to have lived for ninety-four years by word of mouth finds no certain confirmation in the Hunterian catalogues. Owen remarks in his preface that Hunter only began to annotate the collection toward the end of his life, when already seriously ill: "It appears, indeed, to have been too much of a habit throughout its formation, to trust the history of the specimens to memory." [29]

It is possible that the specimen still exists or that it may be mentioned in manuscript materials in the library of the Royal College of Surgeons, or elsewhere. It is not improbable that Hunter preserved the specimen as part of his osteological collection, in which case it would not be possible to identify it.

An attempt has been made to show that the surgeons of Hunter's day were exceedingly worried about collateral circulation. Consequently, although Paget has pointed out the other evidence that caused Hunter to make up his mind on this point, I think he may have hesitated before putting his belief to the test of practice. The results he obtained in an experiment made for another purpose on the stag of Richmond Park may have helped to bring about a final decision.[30] (If this seems to imply excessive caution in Hunter, I must appeal again to Paget, who thought that "in the whole story of the invention nothing is more remarkable than Hunter's caution," both in planning the operation and in performing it.[31]) Some such assumption is necessary to link experiment and operation. The mere coincidence of dates (July and December of the same year) is not of itself conclusive.

Hunter was, of course, very well aware that the arteries differ in respect of anastomoses, and he even pointed to the carotids as a special case.[32] Eleven pages of *A Treatise on the Blood, etc.*, constitute a study "Of the Division, or Branching, of Arteries," [33] including experiments on the carotids of two camels and a swan. He thought it safe to tie the carotid

[29] *Ibid.*, I, iii. Because of the imperfect state of the museum register, Sir William Henry Flower, preparing the 1884 catalogue of osteological specimens, could give no better history of many of the earlier ones than to note: "in the Museum before 1862."

[30] It is preposterous to say that the result of this experiment was the "discovery" of collateral circulation (D. N. B, X, p. 289). Neither was it the first experimental ligation of a carotid. Valsalva (d. 1723) even claimed to have tied the main trunks of both carotids in a dog which survived for twenty-two days and was then killed for dissection (Opera, Cura Morgagni, Epist. XIII, p. 507. Cited by Matthew Baillie in *Transactions of a society for the improvement of medical and chirurgical knowledge*, 1793, p. 125 n.).

[31] Sir James Paget, *op. cit.*, p. 58.

[32] *Works*, III, p. 207.

[33] *Ibid.*, III, pp. 205-216.

in the human subject, though he had not attempted it himself.[84] What might be true of the carotid might not be true of the femoral. I think Hunter was satisfied from the observations already mentioned that there were sufficient anastomoses in the leg to allow him to tie the main vessel. What he apparently learned from his experiment on the stag was the rapidity and completeness with which the collaterals might take over the work of a large artery. William Hunter, in common with other contemporary surgeons, had recommended the attempt at cure by compression, " because it sometimes proves effectual, and is always a commendable preparatory step to the operation, in as much as it inlarges the collateral anastomosing branches, and thereby disposes the part to have a more free circulation after the operation," although he added that compression should not be long continued, for it " will occasion more inflammations, sloughings, and suppuration when the operation is at length performed." [85] Others advised delay simply on the ground that increased size of the aneurism would produce increased size in the collateral branches. These views John Hunter rejected. " When the disease is in an advanced stage, I agree with Mr. Pott in thinking amputation necessary and preferable. . . . The earlier, therefore, the operation is performed the better." He wished to operate " when the disease has done no mischief to the surrounding parts." [86] Obviously he felt that delay might be dangerous; if he also thought it unnecessary, he may have reached this conclusion from his observations on the stag. I wish to emphasize, however, that this is guesswork. Since Hunter does not tell us, we do not know precisely what conclusions he drew from the experiment. The apparent inference to be made from his silence on this question is that the experiment was of rather less importance than Sir William MacCormac and others have supposed.

When Owen gave the story to the Hunterian Society he was making out a case for vivisection. He told it dramatically and laid great stress on the close and immediate connection between experiment and surgical practice. Others who have followed Owen have not only accepted without inquiry a story which is based on oral tradition but have accepted also Owen's assertion of the great importance of this experiment to Hunter's thought.

[84] *Ibid.*, I, p. 549.

[85] *Medical observations and inquiries*, 2nd ed., London, 1758, I, p. 352. Compression was afterwards revived for application at the same point where John Hunter ligated.

[86] *Works*, I, p. 548.

The tale has been told and re-told in many forms, although never, so far as I have been able to find, with any details which are not in Owen's version, excepting always such imaginative additions as "Oho." The stag of Richmond Park seems to have led a rather quiet ectoplasmic existence from 1785 to 1879, when he was much refreshed by the draught of publicity given him by Owen. He has now become a very lordly beast indeed. For many who have written of John Hunter, the story of the stag has seemed the sole and sufficient explanation of the new treatment of aneurism. I think it worth while to point out that the story seems to be based on tradition only and that its importance has perhaps been exaggerated.

PHYSIOLOGY IN ANCIENT INDIAN THOUGHT AND PRACTICE

Need for Further Studies and Research

D. V. S. REDDY

The scope and meaning of the word " physiology " have changed from time to time. Originally, the word signified " the study of life or natural phenomena." Then it was applied to the study of natural philosophy. Ultimately, it has come to mean experimental investigation, observation and interpretation.

The modern medical man thinks that physiology is a science of recent origin, beginning with Claude Bernard and his classical experiments about 100 years ago. Others may start with William Harvey, more than 300 years ago. A book on the history of physiology begins the story in the 6th century B. C. when the Greek philosopher, Alcmaeon, and later Empedocles, expressed some views on the brain, heart, etc.

No mention has so far been made in any monograph on physiology or in a history of physiology, of the antiquity, variety and wealth of physiological ideas and knowledge and observations scattered in the Vedas, Upanishadhas, Epics, Samhithas and the classical medical texts of Charaka and Susrutha. Another point worth mentioning here is the fact that while the physiological knowledge of the 17th, 18th and 19th centuries in Europe was mostly derived from experiments on animals like the frog or dog and was not entirely applicable to the functioning of the human body, all physiological ideas of ancient Indian literature were derived directly from the human body.

Many scholars of the 18th and 19th centuries attempted a careful study of the medicine of ancient India, but they were mostly impressed and got entangled in the Thridhathu and the Thridhosha theory or humoral pathology and the rich materia medica, and the variety of therapeutic procedures, including highly skillful surgical manipulation. It was only Prof. Hoernle who, towards the end of the last century and the beginning of this century, made a study of the scientific basis of medicine and published his monumental work on Hindu medicine commencing with osteology. He did not publish an equally learned treatise on physiology. Various Indian writers, some Ayurvedic scholars, a few practitioners of

modern medicine, and some writers on the history of medicine have occasionally written something fragmentary on the physiology of ancient Indian medicine. Dr. Kutumbiah in a series of articles contributed to the *Andhra Medical College Magazine* and later reprinted in an abbreviated form in the *Medical Bulletin of Bombay*, attempted a critical review of the "Physiology of early Indian writers." Dr. D. N. Banerjee published a series of articles on Ayurvedic physiology in the *Indian Medical Record* and in the *Journal of the Indian Medical Association*. Both these learned writers, the first, a Professor of Medicine and the second, a Sanskrit scholar and a Lecturer in Pathology, take up the words and phrases in the ancient texts, discuss and dissect them and place before us their views or interpretation of some of the physiological terms and ideas, mostly revolving around the pivot of the humoral theory or Thridhathu or Thridhosha pathology. Most of the books on the history of medicine are very unsatisfactory in this respect, as they give undue prominence to the defects in the knowledge of circulation and the fantastic theories of digestion and respiration.

But a student of biology or physiology who studies ancient texts with an unprejudiced mind is likely to come across many interesting physiological ideas and observations, which are claimed to be discoveries of the last few years. One can only indicate some of them in a brief note like the present one.

1. *Heredity.* This subject and particularly its importance in the transmission of certain physical characters and bodily and mental defects has been recognized only during the last half century or so, and yet the Sages of ancient India classified men and women and insisted that one should study the physical and mental make-up and the medical history of seven generations of ancestors of a boy and a girl before they were married.

2. *Constitution and Disease.* Draper and other clinicians have recently stressed the importance of human constitution or body build and its relation to the mind as well as to incidence of diseases. Apart from the old observation that the "constitution" is inherited and determines the incidence of certain diseases, the ancient texts give a great importance to food and training or mode of living as factors which modify the constitution, both anatomical and physiological (i. e., hare, bull, horse types and Sathva, Rajas and Thamasic).

3. *Nutrition.* The importance of nutrition to growth and health was fully understood. The science of nutrition and balanced diets, the effect

of various articles of foodstuffs in health and disease were carefully studied.

4. The effect of environment and the seasons on the health and efficiency of individuals was fully understood. Attempts were made to ascertain and put into force the underlying physiological principles.

5. The science of health through controlled breathing and art of living happily by tuning oneself to life and surrounding nature was cultivated as a daily routine and ritual.

6. The Kings and Sages endeavoured to attain long life. The principles which promoted longevity were studied, and foods and drugs and modes of life which increased the span of life were explored.

7. Sexual science was cultivated as a branch of knowledge which not only promoted pleasures of life, but which also enabled one to control conception or promote fertility, according to necessity.

8. *Eugenics* were studied and incorporated into Dharma Sastra and social life as a matter of great importance to every individual, to every family and to the race. Certain types of males and certain types of females were declared to be unfit for marriage and procreation.

9. Physiology of the nutrition of the pregnant woman was known. Protection against physical and mental shocks was given. Physiology of the infant and the nursing mother were carefully noted.

10. A scientific study and interpretation of dreams was begun. The science of omens, particularly of the twitchings of the muscles of the eye and shoulder, was elaborately developed.

But there are two aspects of the thought and knowledge of the ancient Indian culture which surprise and even baffle the scientific worker or medical historian of the most advanced countries in the West.

The first of these is the boldness and the ambition with which the ancient Sages experimented on themselves to study the effect of postures and breathing exercises on the body and mind. They attempted to control the heart and breathing by gradual exercises leading up to the establishment of a new rhythm in the cardiovascular and the respiratory system, with the ultimate object of reducing the metabolic wear and tear of life's activities and of prolonging the active period of life. By some types of exercises, they even attempted to produce a sort of sensory block of the spinal and other special senses, in order to reduce to the minimum the extraneous impulses and influences in the human body, constantly interrupting and interfering with the cerebral and medullary centres and their inherent rhythms and activities.

The second amazing and ambitious search was to acquire supernatural powers by gradual exercises of the nervous and psychological type. Reading others' minds, telling what is happening at great distances, creating delusions, producing sleep, or relief of pain and suffering, by charms and by powerful mental concentration have all been attempted, on a religio-scientific level.

Physiological research is now entering a new era—i. e. investigations on the human body-mind, with the latest scientific instruments and their revelations. Studied with these newer techniques, the ancient experiments are bound to be not only interesting but they may also supply valuable clues to the mysteries of the human body.

THE BIBLIOGRAPHY OF ANCIENT JEWISH MEDICINE

SOLOMON R. KAGAN

The study of medicine according to the Bible, Talmud and other ancient Hebraic sacred, historical and legal writings attracted the attention of a great number of Jewish and non-Jewish scholars, historians, and investigators. The first systematic researches of medicine in the Bible were published early in the 17th century. A comprehensive study of ancient Hebrew medicine including the Talmud and other ancient Hebrew writings was first published by Rabbi Eljokim Carmoly of France (1802-1875), whose work, *Histoire des médecins juifs*, appeared in 1841-1844 in Brussels. This remarkable treatise was translated into several languages and contains interesting data on the subject. The first scientific study of medicine of the Bible and Talmud was made by Dr. Julius Preuss of Germany (1861-1913). His book, *Biblisch-talmudische Medizin*, which was published in 1911, at Berlin, is regarded as a classical treatise, and influenced many other investigators to continue studies on the same subject.

The earliest bibliography of ancient Hebrew medicine was published in the *Dictionnaire des Sciences Médicales* in Paris, 1819, presenting twenty-six items. In 1842 L. Choulant published his *Bibliotheca Medico-Historica*, including many items from the Old Testament and Talmud. Many other historians and bibliographers edited various publications on the same subject. The latest and most comprehensive study of this subject was accomplished by Dr. Harry Friedenwald in his essay "The Bibliography of Ancient Hebrew Medicine," which appeared in the *Bulletin of the Medical Library Association* in 1935. Since that time a number of new important publications on this subject appeared here and abroad. A number of significant works on the same topics, published before 1935, were not mentioned by Dr. Friedenwald. This article serves as a supplement, and presents numerous references dealing with the subject of ancient Jewish medicine.

General Medicine

Philo Judaeus: *Les Oeuvres contenant l'exposition literale et morale des livres sacrez de Moyse et des autres Prophets.* Paris, 1619. 1131 pp.[1]

Carmoly, E.: *Histoire des médecins juifs, anciens et modernes*, 1844. Translated by John R. W. Dunbar, M. D., Baltimore, from the *Bulletin Médical de Belgique*. The translator was Professor of Surgical Anatomy in the Washington University of Baltimore, and one of the editors of the *Maryland Medical and Surgical Journal*. In his preface he said:

"It was believed that an acceptable service would be rendered to the readers of the Journal and the profession generally, by translating Carmoly's sketches of men so distinguished among God's ancient people for their medical skill and personal character. It will be seen that a debt of gratitude is due to them for having preserved with a bright and steady flame the torch of science through the gloomy period of the dark ages of the world; and there is a peculiar pleasure derived from doing an act of historical justice long after the dust of centuries has settled upon their memories, by giving the due meed of fame to those who toiled and died in the practice of a noble profession, but especially so in awakening the attention of those who follow in their footsteps in a New World."

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[1] This remarkable book on Moses is found in the Boston Medical Library. Owing to the able efforts of the director, Mr. James F. Ballard, the Library has obtained, by means of the Solomon M. Hyams Fund for the establishment of a Hebrew Medical Section, a very rare and valuable collection of books and manuscripts on Hebrew medical literature in Hebrew, Arabic, Latin, German, and other languages. It is one of the greatest collections on this subject in the country. Among the most interesting books of this collection are:

I. Isaac Judaeus. *De febribus.* In the Latin version of Constantinus Africanus. Ms. on vellum. Middle of the 13th century, ca. 1250. Written in southern France, probably at Montpellier. 64 folios.

II. *Salernum codex.* Containing treatises by Isaac Judaeus, Copho, and others. Ms. on vellum. 1200-1250. Written in Italy, probably at Salerno. 82 folios.

III. Elisha. *Mafteah harefuah.* Ms. on paper. Late XIVth or early XVth century. 166 folios. The most complete copy known. Unpublished.

IV. Avicenna. *Canon medicinae libro I-V.* Translated by Jōsēf Lorki and Nātān ha-Me'ati from the Arabic into Hebrew. Five books in three vols. Naples, Azriel ben Joseph de Gunzenhausen, 7 Kislēw 252 [9 Nov. 1491]. The first printing of a medical treatise in Hebrew.

V. *Mishnah.* With commentary of Moses Maimonides. In Hebrew. 2 vols. Naples, Joshua Solomon, 8 May, 1492.

XI. Maimonides, Moses. *De regimine sanitatis ad Soldanum Babyloniae.* Florence, Apud Sanctum Jacobum de Ripoli, ca. 1481. In a beautiful contemporary stamped leather binding.

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MEDICO-HISTORICAL NEWS AND ACTIVITIES

THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE DURING THE ACADEMIC YEAR 1947-1848

I. STAFF, GRADUATE AND POST-GRADUATE STUDENTS

———, William H. Welch Professor of the History of Medicine and Director of the Institute of the History of Medicine.

Owsei Temkin, M. D., Associate Professor of the History of Medicine.

* Ludwig Edelstein, Ph. D., Associate Professor of the History of Medicine.

Genevieve Miller, M. A., Instructor in the History of Medicine.

Sanford V. Larkey, M. A. (Oxon.), M. D., Lecturer in the History of Medicine.

Edward H. Hume, M. A., M. D., LL. D., Lecturer in the History of Medicine.

Dr. Lloyd G. Stevenson, who received his M. D. degree at the University of Western Ontario in 1944, entered the Department as a student of the School of Higher Studies of the Faculty of Philosophy of The Johns Hopkins University to study for the doctorate in the history of medicine.

Miss Hsiu-chen Lo was enrolled during part of the year as a special student, working on medical bibliography under Dr. Larkey's guidance.

Dr. Otto E. Guttentag, Associate Professor at the University of California Medical School, spent part of a sabbatical year at the Institute working on the concept of the clinical entity.

II. PUBLICATIONS

A. *Publications of the Institute.*

Four numbers of Volume XXI and the first two numbers of Volume XXII of the *Bulletin of the History of Medicine* were published during the year.

One *Supplement* was issued during the year:

Noah Webster: Letters on Yellow Fever Addressed to Dr. William Currie, with an introductory essay by Benjamin Spector. [*Supplements to the Bulletin of the History of Medicine*, No. 9.] 1947. 110 pp.

Supplement No. 10, Robert O. Steuer, (Whdw) Aetiological Principle of Pyaemia in Ancient Egyptian Medicine, is in final print.

B. *Publications by Members of the Institute.*

Ludwig Edelstein

Medical Historiography in 1847. *Bull. Hist. Med.*, 1947; 21: 495-511.

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* Resigned as of September 15, 1947.

SANFORD V. LARKEY

Medicine in 1847—Great Britain. *Bull. Hist. Med.*, 1947, 21: 478-484.

Introduction to the Problems of Medical Subject Headings. *Bull. Med. Library Association*, 1948, 36: 70-81.

GENEVIEVE MILLER

Medicine in 1847—The United States. *Bull. Hist. Med.*, 1947, 21: 485-495.

Bibliography of the History of Medicine of the United States and Canada—1946. *Bull. Hist. Med.*, 1947, 21: 573-617.

Introduction to Henry E. Sigerist Valedictory Number. *Bull. Hist. Med.*, 1948, 22: 3.

[with Henry E. Sigerist] A Bibliography of the Publications of the Johns Hopkins Institute of the History of Medicine, 1929 to 1947. *Bull. Hist. Med.*, 1948, 22: 65-93.

Letters of Edward Jenner. *Medical Arts and Sciences*, 1948, 2: 5-17.

Bibliography of the History of Medicine of the United States and Canada—1947. *Bull. Hist. Med.*, 1948, 22: 297-330.

OWSEI TEMKIN

Medicine in 1847—Continental Europe. *Bull. Hist. Med.*, 1947, 21: 469-478.

Research before Hughlings Jackson. *Proceedings of the Association for Research in Nervous and Mental Disease*, 1946, 26: 3-7.

Comments on the German Edition of Rush's Account of the Yellow Fever. *Victor Robinson Memorial Volume: Essays on History of Medicine*, New York: Froben Press, 1948, pp. 375-382.

III. COURSES

Introductory and General Courses

1. Outlines of the History of Medicine. Dr. TEMKIN. First quarter, Tu., Th., 4-5.
2. Introduction to the History of American Medicine. Miss MILLER. Second quarter, Tu., 5-6.
3. Use of the Library. Dr. LARKEY. Four lectures and demonstrations.

Seminar in the History of Medicine

4. History of Anatomy. Dr. TEMKIN. Second quarter, Th., 5-6.
5. Paracelsus and His Time. Dr. TEMKIN. Second quarter, W., 5-6.
6. Psychiatry in the Nineteenth Century. Dr. TEMKIN. Third quarter, Th., 5-6.

Seminar in the Sociology of Medicine

7. Introduction to the Sociology of Medicine. Dr. TEMKIN. Fourth quarter, Tu., 5-6.

IV. COLLECTIONS AND GIFTS

As in preceding years, the Institute was the recipient of many gifts of pictures, reprints and books from various donors.

During the year the collections were increased by:

1. Books ..... 70 items
2. Portraits ..... 9 items
3. Pictures ..... 12 items

A WELCOME TO PROFESSOR MAX NEUBURGER

Professor Max Neuburger, who on December 8, 1948 will celebrate his eightieth birthday, has arrived in this country. In 1939, shortly after the German occupation of Austria, Professor Neuburger left Vienna where he had occupied the chair of medical history at the university. He went to England and became associated with the Wellcome Historical Medical Museum in London. Professor Neuburger is now going to reside with his son, Dr. Frederick K. Neuburger, (20 Toledo Street, Buffalo 17, New York). The American Association of the History of Medicine sent the following message of welcome to its honorary member:

Dear Professor Neuburger:

Your many friends and interested medical historians are elated to learn that you have decided to make your home with your son in this country. Much has transpired since we last met at the International Congress of the History of Medicine at Madrid in 1935, where we discussed in open forum many phases of that subject. During much of the intervening time your coming and going has been restricted because of political changes. You were unable to attend the following International Congress held in 1938 in Jugoslavia. You were not forgotten by the delegates to that meeting. Your extensive knowledge and seasoned counsel were sorely missed.

It was with a feeling of relief that we were apprised that you had found an opportunity to carry on your work in the Wellcome Historical Medical Museum in London. However, we were again disturbed on your behalf by news that the activities of this institution were being curtailed. A man rapidly approaching his eightieth birthday can ill withstand the buffeting that attends frequent changes of scene. By this time you should, without worry or concern, be reaping the rewards of outstanding scholarship, efficient teaching, continued research, and frequent publication of your investigations.

We sincerely trust that you may be permitted to spend many more years in peace and serenity, enjoying memories of your successes, making new friends, and occasionally stimulating us with some message regarding your historical interests. We wish you both good health and enjoyment in your new home. May you have attained at long last a happy issue from all your tribulations.

This message is sent to you in accordance with a resolution unanimously adopted at the Annual Meeting of the American Association of the History of Medicine, held in Philadelphia, May 27, 1948.

Yours most cordially,

[signed] HOWARD DITTRICK, M. D.
Secretary

NATIONAL NEWS

American Dermatological Association

At the sixty-eighth annual meeting of the American Dermatological Association held at Coronado, California, Dr. Paul E. Bechet of Elizabeth, New Jersey, on April 26, 1948 read a paper entitled: "The Founding and First Meeting of the American Dermatological Association. A Milestone in the Progress of American Dermatology." Dr. Bechet was elected Historian of the Association, an office created in 1916 when the Association was forty years old.

New York

On May 20, 1948, a bust of Walter Reed was unveiled at the Hall of Fame, New York University. During the ceremony Brigadier General George E. Armstrong, Deputy Surgeon General, U. S. Army, delivered a talk on "The Work of Dr. Walter Reed."

The Seminars in the History of Medicine which have been conducted at the Mount Sinai Hospital of New York by Drs. Saul Jarcho and Frederic Zeman, offered the following programs during the season of 1947-1948.

I. September 30, 1947
   1. Typhus in the Napoleonic Wars
      Chester Cassel, M. D.
   2. The Black Assizes
      Henry Janowitz, M. D.
   3. Jail Typhus During the Civil War
      Samuel Klibanoff, M. D.
   4. Personal Experiences with Typhus in World War II
      Henry Huber, M. D.

II. November 25, 1947
   1. Elisha Bartlett, American Clinician
      Samuel Sapin, M. D.
   2. The Discovery of Conservation of Energy
      Sergei Feitelberg, M. D.

III. December 30, 1947
   1. The History of Electron Microscopy
      Jerome S. Harris, M. D.

2. Ernst Abbe and the Zeiss Foundation
   Bruno Kisch, M. D.
3. Discussion:
   Maurice Richter, M. D.
   Sergei Feitelberg, M. D.
   Alfred Florman, M. D.

IV. January 27, 1948
1. The Discovery of the Electric Current
   Stephen Yohalem, M. D.
2. Poiseuille: Physician and Physicist
   Marcy L. Sussman, M. D.

V. February 24, 1948
1. The Methods and Achievement of William Harvey
   Raymond Megibow, M. D.
2. The Methods and Achievement of Sir Thomas Lewis
   Milton Mendlowitz, M. D.

VI. March 30, 1948
1. The Methods and Contributions of Paul Bert
   William H. Goldwater, Ph. D.
2. The History of Oxygen in Medicine
   Bernard M. Schwartz, M. D.
3. Discussion:
   Harry Sobotka, Ph. D.
   Fritz Lieben, Ph. D.
   Norman Simon, M.D.

VII. April 27, 1948
1. The Development of Clinical Knowledge of the Thyroid Gland
   J. Lester Gabrilove, M. D.
2. The Development of Chemical and Physiological Knowledge of the Thyroid Gland
   Solomon Silver, M. D.

VIII. May 25, 1948
1. The Contributions of Sir James Mackenzie to Cardiology
   Simon Dack, M. D.
2. The Contributions of Willem Einthoven to Electrocardiography
   Arthur Grishman, M. D.
3. Discussion:
   B. S. Oppenheimer, M. D.

IX. June 29, 1948
1. Development of the Problem of Bone Grafting
   Robert Siffert, M. D.
2. The Development of Concepts of Osteology
   Edgar Bick, M. D.
3. The Strasbourg Collection of Jewish Skeletons
   Saul Jarcho, M. D.
4. Discussion:
   Carlo Henze, M. D.

NEWS FROM ABROAD

Great Britain

At the meeting of the History of Medicine Section of the Royal Society of Medicine on June 2, 1948, Dr. E. Ashworth Underwood spoke on "Marcus Beck and Lord Lister: Notes on Some Unpublished Correspondence," and Dr. Hector Charles Cameron on "The Birth of Listerism and Personal Recollections of Lord Lister."

Netherlands

On May 22-23, 1948 the spring meeting of the Society for History of Medicine, Mathematics and Sciences took place at Hoorn, Holland. The following papers were presented:

Thijs Mol, "De oude Nederlandse Walvisvaart."
Prof. Ir. R. J. Forbes, "De ontwikkeling von het onderwijs in de Geschiedenis in Nederland."
J. C. Kerkmeijer, "Korte geschiedenis van Hoorn."
Prof. Dr. A. Dobrovici, "Les origines de la biologie."
Dr. K. T. A. Halbertsma, "Drie beroemde Hoornse artsen-letterkundigen uit de zestiende eeuw (Dirck Velius, Pieter Hoogerbeets en Hadrianus Junius)."
Dr. F. M. G. De Feyer, "Een en ander uit de geschiedenis der tuberculose."
Dr. G. Ten Doesschate, "Schijnbare grootte."

Switzerland

The Swiss Society of the History of Medicine and Science will hold its annual meeting in St. Gall on September 5-6, 1948.

Czechoslovakia

Dr. Miloslav Matoušek has been appointed Deputy Director of the Institute of the History of Medicine at the Charles University, Prague, as successor to Professor J. Vinař. Dr. Matoušek was arrested by the Germans on September 1, 1939, sent to Pankŕác Gestapo prison in Prague, then to Dachau, later to Buchenwald where he remained until he was liberated by American troops in April 1945. In Buchenwald he worked first as a gardener until in 1942 he was put in charge of the Department of Internal Diseases of the Camp Infirmary where he did whatever was humanly possible to alleviate the lot of his fellow prisoners. He wrote up his experiences under the title "Buchenwald through a doctor's eyes," in *Medical Science Abused*, German medical science as practised in concentration camps and in the so-called Protectorate, reported by Czechoslovak doctors (Orbis — Prague, 1946), a publication that gives a terrifying picture of the depravity and perversity of German physicians who dishonored a once noble profession in a way that will never be forgotten.

Dr. Matoušek is the author of a number of historical monographs: *Život Jana Evangelisty Purkyně*, a biography of the great physiologist, published in the series *Profily* (Prague, 1946); *České lékařstvo v druhé polovici 19. století* (Czech phy-

sicians in the second half of the 19th century, Prague, 1947); *Život a působení Dr. F. C. Kampelíka* (Prague, 1947), a study of the life and work of a distinguished Czech general practitioner and writer who lived from 1805 to 1872. Dr. Matoušek, moreover, has written a number of historical papers of which I would like to mention particularly his study on obstetrics and gynecology in the Medical Faculty of Charles University from 1348 to 1948 (Zvláštní otisk z Čs. Gynaekologie, ročník 13/27, sešit, 3, pp. 112-127, 7 portraits).

H. E. S.

EDITORIAL ANNOUNCEMENT

Miss Genevieve Miller, as announced in the May-June number of the Bulletin *(p. 336), has left the Johns Hopkins Institute of the History of Medicine in order to study for the doctorate in the history of science at Cornell University. As of July 1, 1948 the undersigned has become Acting Editor of the* Bulletin.

For many years, the Bulletin *greatly relied on Miss Miller's assistance; her name appearing as Associate Editor in Volumes XV-XXI and as Acting Editor in the first three issues of the present volume. The* Bulletin, *its contributors and its readers owe a large measure of gratitude to Miss Miller for her devoted work. Our best wishes accompany her into her new field of studies and activity.*

Owsei Temkin

BOOK REVIEWS

ERIK IVERSEN. *Papyrus Carlsberg No. VIII with some remarks on the Egyptian origin of some popular birth prognoses.* Det Kgl. Danske Videnskabernes Selskab. Historisk-filologiske Meddelelser XXVI, 5. Copenhagen: Ejnar Munksgaard, 1939. 31 pp., 2 pl. Kr. 3.00.

Although this study was published some time ago, I would like to draw the attention of my colleagues to it because I find it unusually interesting and because I am afraid that it has escaped the attention of medical historians in America as it was issued at the outbreak of the war.

If a married couple has no children, who is responsible for it, the husband or the wife? When is a woman pregnant and when not? And if she is pregnant, will she give birth to a boy or to a girl? There are questions that parents have asked at all times, and it is no wonder that methods have been devised very early in order to find an answer to them. The measures applied may seem strange today, but we should not simply label them as "most absurd superstitions" as W. Wreszinski did in the case of birth prognoses of the Berlin Papyrus 3038,[1] because, after all, there is a sound idea behind all these prescriptions. It is perfectly correct to assume that the body of the woman who has conceived is different from what it was before and that this difference should manifest itself in the early stages, if not in the general appearance of the woman then perhaps in her urine. Since Aschheim and Zondek this does not seem absurd at all but, of course, the Egyptian method was not scientific: *you shall put wheat and barley into purses of cloth, the woman shall pass her water on it every day—it being mixed with dates and sand. If both sprout she will give birth; if the wheat sprouts, she will give birth to a boy; if the barley sprouts, she will give birth to a girl; if they do not sprout, she will not give birth at all.*

The papyrus collection owned by the Carlsberg Foundation and deposited in the Egyptological Institute of the University of Copenhagen contains a few medical fragments from the XIXth or XXth Dynasty, the very damaged remnants of two once connected leaves. The recto has fragments of a treatise on diseases of the eyes, the text of which can be found almost word for word in Papyrus Ebers. This is very important because it confirms the theory that the constituent monographs of Papyrus Ebers were widespread.

The verso, written by another hand, forms the subject of this study; it deals with gynaecological matters similar to, if not identical with, those of the third page of the Kahun Gynaecological Papyrus and of the prescriptions on the verso of the Berlin Papyrus. With the help of these parallel texts it was possible to fill in gaps of the fragments and thus to restore the text to a certain extent. I fully agree with the author when he concludes that these prognoses must be fragments of a comprehensive treatise on pregnancy, childbirth and diseases of women, since we find them

[1] *Der grosse medizinische Papyrus des Berliner Museums*, Leipzig, 1909, p. XIV.

in three different papyri. Such a book was later part of the Hermetic writings referred to by Clemens Alexandrinus.

The author not only gives us text and translation of the seven prognoses contained in these fragments but also discusses their history, to which he was able to make notable contributions. Indeed as early as 1873 Le Page Renouf found that some early Egyptian birth prognoses were encountered in Hippocratic writings in almost the same words. Erman found some in the 17th century German *Dreckapotheke* of Franz Paullini. Ebers found one such prescription in Constantinus Africanus, and in a famous paper [2] elaborated a theory according to which ancient Egyptian lore through Coptic and Arabic translations had reached Constantinus and the School of Salerno whence it had become part of European medical folk-lore.

Actually there can be no doubt that the way of transmission was through the medium of Greek medicine. The Hippocratic parallels are undeniable, and in the case of one prognosis Iversen found the Greek source in a little-known text περὶ παρθενευουσῶν published by Bursian in 1873,[3] which goes back to Galen's book περὶ εὐπορίστων.

It is undoubtedly true that Greek medicine learned a great deal from Egypt as well as from Babylonia. Traffic between the countries was intensive. Greek mercenaries served in the armies of Psammetich, and soldiers were accompanied by surgeons who were anxious to learn from their foreign colleagues. I am inclined to be skeptical when foreign influences are pointed out because in medicine so much has been discovered spontaneously in various parts of the globe. But a prescription of a 13th century B. C. manuscript which in substance says: take wheat and barley, add the woman's urine to it and if the wheat sprouts she will have a boy but if the barley sprouts it will be a girl, is so specific that if you find the same instruction in the ancient Greek, in the Western mediaeval literature and later in European folk medicine, there can in my mind be no doubt as to the common origin of such a prescription.

Thus Iversen in his short study has raised and solved some very significant problems of medical history, and we are happy to hear that he is now working on a comprehensive dictionary of Egyptian medical terms.

It really is a pleasure to see how much excellent work is being done in Europe in the field of ancient Egyptian medicine.

HENRY E. SIGERIST

NOAH WEBSTER: *Letters on Yellow Fever Addressed to Dr. William Currie.* With an introductory essay by BENJAMIN SPECTOR. Baltimore: The Johns Hopkins Press, 1947 [*Supplements to the Bulletin of the History of Medicine* No. 9.] vi + 110 pp., 1 ill. $2.00.

The great American lexicographer is well known for his *Brief History of Epidemic and Pestilential Disease* (1799), one of the first systematic surveys of

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[2] Wie Altägyptisches in die europäische Volksmedicin gelangte, *Zschr. ägypt. Sprache*, 1895, 33: 1 ff.

[3] Conrad Bursian, Fragmentum medicum Graecum. In: *Index Scholarum Hibernarum in Universitate Litterarum Jenensi*, Jena, 1873.

the history of epidemics. His preoccupation with epidemics grew, like that of most of his American contemporaries, out of his concern about yellow fever, which had become a hygienic and commercial problem of the first magnitude for the young republic. His first publication in the field of epidemiology was his book: *A Collection of Papers on the Subject of Bilious Fever, Prevalent in the United States for a Few Years Past*, (New York, 1796). Between this first book and his classic history, Webster had published in 1797 in the (New York) *Commercial Advertiser* a series of 25 articles ("Letters" to Dr. William Currie of Philadelphia, the protagonist of contagionism in this city) where he explained his anticontagionist point of view. These letters, so far practically inaccessible through their form of publication, have now become available through the good services of Dr. Spector and the *Bulletin of the History of Medicine*.

Yellow fever, which Webster and Currie, like most of their contemporaries, lumped together with bubonic plague, typhus and other fevers, was to Webster not imported and "contagious," but of local origin and "infectious." (As far as this division between "infection" and "contagion" goes, it was neither invented nor handled very consistently by Webster.) Webster showed in his letters that a great number of famous "plagues" like those of antiquity, in Egypt, the sweating sickness, the London plague, had been of local origin, and that the "temperate" climate of the East coast was extremely conducive to the production of plagues. Webster spent much time on the history of the so-called Bulam fever of West Africa, in his mind a figment of the commercial interests of West Indian slave-holders. In his mind yellow fever was the effect not of specific contagion, but of "impure air," locally through decomposing matter, and generally through epidemic constitution. It was preventable through sanitation and city planning.

Webster is thus a typical "anticontagionist," close to Benjamin Rush ideologically and personally. It has now been recognized that logically the anticontagionists had a lot of valid observations on their side, which the old theory of contagion (lacking the notion of the carrier) was completely unable to explain, and that their sanitary policies were progressive. Medically speaking, more interesting anticontagionist treatises can be found than this series of Webster, especially La Roche's later classic on yellow fever. Webster's material is chosen too uncritically, and his presentation lacks order, and clinical sense or interest. The main value of this republication rests in its cultural and historical aspects as a courageous and thoughtful work of one of the leading spirits of this country. This is particularly evident in the admirable letter XXIV on the building and planning of healthy cities, still worth while to be studied, and, alas, still unobserved in many places. We are all indebted to Dr. Spector for this resuscitation and a very competent introduction.

ERWIN H. ACKERKNECHT

SOLOMON R. KAGAN (editor). *Victor Robinson Memorial Volume: Essays on History of Medicine*. New York: Froben Press, 1948. 447 pp., ill. $10.00.

This book would have delighted Victor Robinson, had he lived to see it published. Unfortunately, however, the work designed originally as a Sixtieth Birth-

day Tribute has become a Memorial Volume, a wreath of laurel, and of happy remembrance, laid by his friends and colleagues upon the tomb of one of America's most outstanding medical historians. Born in the Ukraine, Victor Robinson was only three years old when he accompanied his parents to America. After he graduated at Chicago in 1917, he devoted all his attention to the history of medicine. In 1920 he founded *Medical Life*, the first monthly periodical in the English language to deal exclusively with the history of medicine, which continued to appear until 1938. Appointed Professor of History of Medicine at Temple University School of Medicine, Philadelphia, in 1929, he held this appointment until his sudden death from coronary thrombosis on 8th January 1947. But it is not entirely on account of his brilliant scholarship, nor even for his clear and vivid writings, that Victor Robinson will live on in the memories of his friends and admirers. He will be remembered chiefly for his vigorous personality, his boundless energy, and his infectious enthusiasm for the subject to which thirty short years of his pilgrimage were dedicated. The obituary notices included in this volume portray very clearly the measure of the man, who gave so freely of his time and knowledge, and who presented to so many students and readers the glorious kingdom of medicine as revealed in history. Undoubtedly, this volume, had it crowned a sixtieth year instead of a finished life, would have been Victor Robinson's most cherished possession. It is indeed a rich mine of medical history. In a collection so varied, however, there is apt to be a certain degree of overlapping, although in the present volume the net has been spread so widely that each of the papers retains its individual merit, and that merit is very high indeed. The classification and arrangement must have presented a difficult problem to Dr. Kagan and his Editorial Board. They solved it simply by following an alphabetical order from A to Z, from the history of cinchona by E. H. Ackerknecht to " Medical History as a Force, etc.," by G. Zilboorg.

It seems highly desirable that a collection so original in content should be used as a book of reference. Therefore, the absence of an index, or even of a classified table of contents, is to be deplored. There are here many papers which ought to be readily available, and one fears they may be forgotten and even lost through lack of a simple signpost. For this reason it seems advisable that some of the titles should be mentioned, even in this brief review.

As might be expected, the biographical approach is favoured by a number of the contributors. For example, there are papers by P. E. Bechet on Daniel Le Clerc, the first great medical historian, and by W. Pagel on Julius Leopold Pagel, the inspiring German medical historian who died in 1912, both men after Robinson's own heart. There is also a collective study of Jewish medical historians by H. A. Savitz. A. G. Elftman and B. M. Fried each approach Metchnikoff from a different angle; C. L. Gossels writes on Herman Strauss, H. Goodman on Albert Neisser, S. R. Kagan on Sigmund Freud, E. B. Kaplan on Duchenne, W. E. Robertson on Servetus, and A. L. Wolbarst on Ehrlich—to mention only a few of those studies in biography.

The history of diseases has also claimed attention, and perhaps the most noteworthy paper of this class is by R. Friedman on " Scabies in Antiquity." There are also historical notes on regional enteritis by H. I. Goldstein, on the serology of

syphilis by P. L. Kahn, on Rush's account of yellow fever by O. Temkin, and on gastric fistula by M. and P. Thorek. In a very interesting discussion on Job's disease, D. I. Macht concludes that the affliction of Job was not syphilis, nor smallpox, nor leprosy, but pemphigus, "that baffling and dreadful disease." Allied to this paper is another on Hebrew medicine by S. Muntner, and a third, on "The Care of the Sick in the Bible and the Talmud," translated from Julius Preuss by P. Rosenthal. Chauncey D. Leake discusses "The Classic Problems of Pharmacology," and George Urdang develops the theme of pharmacopoeias, on which he is the acknowledged authority. Pediatric neurology claims the attention of A. Levinson, while L. Kanner writes on the history of child psychiatry.

Included are only a few illustrations, portraits for the most part, but Curt Proskauer's paper on the 14th century Avicenna manuscript deals with six illuminated initials, showing a doctor examining the mouth of a patient, while three interesting photographs accompany H. Dittrick's account of "Some Old Hospitals in Spain."

Most of the papers are enhanced by notes and bibliographies. The value of the bold print and excellent paper make the book a joy to read, although it is surprisingly heavy for a small octavo. Altogether it forms a splendid tribute to the distinguished historian who has so lately left us.

DOUGLAS GUTHRIE

HERMANN HAGEDORN. *Prophet in the Wilderness, The Story of Albert Schweitzer.* New York: Macmillan. 1947. 221 pp. $3.00.

It was Gandhi who said, "If a single man achieves the highest kind of love, it will be sufficient to neutralize the hate of millions." Few men of today can measure up to that standard, but this eminent physician, musician, philosopher, and theologian, who has given thirty-five years of his rich life to serve Africa, is certainly one of those few.

What the influences were that weaned this distinguished scholar away from Strasbourg is a story that we should all know. What this reviewer is concerned with, however, is to point out some of the factors of his life in Africa, on the shores of the Ogowe River, in Gabon, French Equatorial Africa.

Hear him reflect as, on one occasion, he saw the green African shore recede while standing on the deck of a steamer that was bearing him to France for a furlough. He stood there with two of the nurses, homeward bound. "All three were thinking of Africa, the terror of it, and the beauty; the natives so maddening and so dear; the work, so exhausting and so satisfying." There you have the attachment that bound him unfalteringly to the task he had undertaken in 1913.

Hear him again, as he speaks of "the terrible contest between the European worker who bears the responsibility and is always in a hurry, and the child of nature who does not know what responsibility is," and lies cradled in happy timelessness. In this daily, even hourly, struggle Schweitzer recognized that every white man, including himself, was continually in danger of "gradual moral ruin."

When dying men and women were dumped at the hospital landing, neighbors of their own village would insist there was no hope for them. Why bother with them? When they died, the other patients wondered whether Schweitzer, the Doctor, were

really all he was said to be. Was not the first test of a fetishman his recognition whether or not an illness was fatal? What fetishman would accept a hopeless case? The Doctor smiled his tolerant smile, and eased as best he could the last hours of the homeless derelicts.

Think how depressing it must have been to the Doctor when up and down the river ran the word: "Keep away from the Lambaréné doctor. He has gone evil and is forcing men to work." Then the rumor took an Egyptian turn. "The Doctor is oppressing the people in order to get bricks."

But best of all watch him as sufferers come pouring in, with malaria and dysentery and foot ulcers such as no mind unacquainted with the tropics could even imagine. "Time meant nothing to them, rules nothing." The simplest regulations could not be communicated, for there ten languages were spoken, and even a gifted interpreter had his limits. He had to adapt the therapeutic methods of the white man to the psychology of the black. He never forgot that the native fetishman also professed to heal and that, in the mind of the patient, he must, to be effective, out-magic the magician. His associate noted how the Doctor occasionally took on the manner and almost the quality of the grand sorcerer, looking slyly at the black nurse who acted as interpreter, as he devised elaborate ruses to persuade the black man that the worm, Pain, was being exorcised.

And what a never-ending battle he fought to keep his dysentery patients from spreading pollution, and to keep others, who were recuperating from wounds, from infecting themselves with the dysentery of their neighbors. The patients would not observe the hospital rules even for their own safety, slipping surreptitiously out of bed in the dark to drink the polluted river water rather than walk a hundred feet to the unpolluted spring. The whole hospital was becoming infected.

"He tried to lead his unruly children with such laughter as remained in him, but in the consulting room one day his overstrained patience finally cracked. He threw himself into a chair, exclaiming, 'What a blockhead I was to come out here to savages like these!'"

"Yes, doctor," remarked his faithful black assistant, "here on earth you are a great blockhead, but not in heaven!"

Now and then his temper wore thin and he saw sharply under that tropic sun the incongruity of a philosopher, a musician, a surgeon, spending years out of his life acting as overseer for a gang of blacks. It was then that he thought of his great mentor, Goethe, making Faust at the end of his life find the satisfaction and inner place he had found nowhere else, winning from the sea land on which men could live and feed themselves.

Really to understand Albert Schweitzer you had to watch him discovering what a bond pain was. As he waited for an operation after getting back to his home there deepened within him the sense of fellowship with all who suffered. An idea startled him and obsessed him—*the fellowship of those who bear the mark of pain.* He came to see this fellowship not only as one of compassion, but of a cohesive body, enjoined by suffering to help the suffering; while life endures, to relieve pain.

EDWARD H. HUME

CONTRIBUTORS TO THIS NUMBER

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